

April 17, 2007

Brian Katz
Vice President

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

**SUBJECT: San Onofre Nuclear Generating Station, Units 2 and 3
Docket Nos. 50-361 and 50-362
Proposed Change Number (PCN) 549
Application to Revise Technical Specifications Regarding Control
Room Envelope Habitability in Accordance with TSTF-448, Revision 3,
Using the Consolidated Line Item Improvement Process**

Gentlemen:

In accordance with the provisions of 10 CFR 50.90, Southern California Edison (SCE) is submitting a request for an amendment to the Technical Specifications (TSs) for Facility Operating Licenses NPF-10 and NPF-15 for San Onofre Nuclear Generating Station, Units 2 and 3, respectively. The proposed amendment would modify TS requirements related to control room envelope habitability in accordance with TSTF-448, Revision 3, using the Consolidated Line Item Improvement Process.

Enclosure 2 of this letter consists of Proposed Change Number (PCN) 549, which provides a description of the proposed changes, the requested confirmation of applicability, plant-specific verifications and a list of regulatory commitments made in this submittal. The attachments to PCN-549 provide the existing TS pages, the existing TS pages marked up to show the proposed changes, revised (clean) pages, and (for information only) TS Bases pages marked up to show the proposed changes.

SCE requests that this amendment be issued effective as of the date of issuance, to be implemented within 60 days from the date of issuance.

In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being forwarded to the designated California Official.

If you have any questions or require additional information, please contact Linda Conklin at (949) 368-9443.

Sincerely,



Enclosures:

1. Notarized Affidavits
2. Licensee's Evaluation
 - Attachments
 - A. Existing Pages, Unit 2
 - B. Existing Pages, Unit 3
 - C. Proposed Pages, Redline and Strikeout, Unit 2
 - D. Proposed Pages, Redline and Strikeout, Unit 3
 - E. Proposed Pages, Unit 2
 - F. Proposed Pages, Unit 3
 - G. Proposed Bases, Unit 2 (Information Only)
 - H. Proposed Bases, Unit 3 (Information Only)

- cc: B. S. Mallett, Regional Administrator, NRC Region IV
N. Kalyanam, NRC Project Manager, San Onofre Units 2 and 3
C. C. Osterholtz, NRC Senior Resident Inspector, San Onofre Units 2 and 3
S. Y. Hsu, California Department of Health Services, Radiologic Health Branch

ENCLOSURE 1
NOTARIZED AFFIDAVITS

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Application of SOUTHERN CALIFORNIA)	
EDISON COMPANY, ET AL. for a Class 103)	Docket No. 50-361
License to Acquire, Possess, and Use)	
a Utilization Facility as Part of)	Amendment Application
Unit No. 2 of the San Onofre Nuclear)	No. 250
Generating Station)	

SOUTHERN CALIFORNIA EDISON COMPANY, et al. pursuant to 10CFR50.90, hereby submit Amendment Application No. 250. This amendment application consists of Proposed Change No. 549 to Facility Operating License No. NPF-10. Proposed Change No. 549 is a request to modify Technical Specification requirements related to control room envelope habitability in accordance with Technical Specification Task Force (TSTF)-448, Revision 3, using the Consolidated Line Item Improvement Process.

State of California
County of San Diego

Brian Katz
Brian Katz, Vice President

Subscribed and sworn to (~~or affirmed~~) before me on this 17th day of
April, 2007,

by Brian Katz,

personally known to me ~~or proved to me on the basis of satisfactory evidence~~ to be the
person who appeared before me.

Dawn A. Farrell
Notary Public



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Application of SOUTHERN CALIFORNIA)	
EDISON COMPANY, ET AL. for a Class 103)	Docket No. 50-362
License to Acquire, Possess, and Use)	
a Utilization Facility as Part of)	Amendment Application
Unit No. 3 of the San Onofre Nuclear)	No. 235
Generating Station		

SOUTHERN CALIFORNIA EDISON COMPANY, et al. pursuant to 10CFR50.90, hereby submit Amendment Application No. 235. This amendment application consists of Proposed Change No. 549 to Facility Operating License No. NPF-15. Proposed Change No. 549 is a request to modify Technical Specification requirements related to control room envelope habitability in accordance with Technical Specification Task Force (TSTF)-448, Revision 3, using the Consolidated Line Item Improvement Process.

State of California
County of San Diego

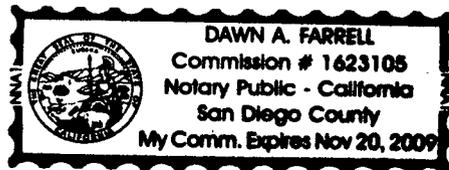
Brian Katz
Brian Katz, Vice President

Subscribed and sworn to (~~or affirmed~~) before me on this 17th day of
April, 2007,

by Brian Katz,

personally known to me ~~or proved to me on the basis of satisfactory evidence~~ to be the person who appeared before me.

Dawn A. Farrell
Notary Public



ENCLOSURE 2

LICENSEE'S EVALUATION

PCN 549

Control Room Habitability

1.0 DESCRIPTION

2.0 ASSESSMENT

- 2.1 Applicability of Published Safety Evaluation
- 2.2 Optional Changes and Variations
- 2.3 License Condition Regarding Initial Performance of New Surveillance and Assessment Requirements

3.0 REGULATORY ANALYSIS

- 3.1 No Significant Hazards Consideration Determination
- 3.2 Commitments

4.0 ENVIRONMENTAL EVALUATION

Attachments

- A. Existing Pages, Unit 2
- B. Existing Pages, Unit 3
- C. Proposed Pages, Redline and Strikeout, Unit 2
- D. Proposed Pages, Redline and Strikeout, Unit 3
- E. Proposed Pages, Unit 2
- F. Proposed Pages, Unit 3
- G. Proposed Bases, Unit 2 (Information Only)
- H. Proposed Bases, Unit 3 (Information Only)

1.0 DESCRIPTION

The proposed amendment would modify technical specification (TS) requirements related to control room envelope habitability in TS 3.7.11, "Control Room Emergency Air Cleanup System (CREACUS)" and TS Section 5.5, "Administrative Programs."

The changes are consistent with Nuclear Regulatory Commission (NRC) approved Industry/Technical Specification Task Force (TSTF) STS change TSTF-448, Revision 3. The availability of this TS improvement was published in the **Federal Register** on January 17, 2007 as part of the Consolidated Line Item Improvement Process (CLIP).

2.0 ASSESSMENT

2.1 *Applicability of Published Safety Evaluation*

Southern California Edison (SCE) has reviewed the safety evaluation dated January 17, 2007 as part of the CLIP. This review included a review of the NRC staff's evaluation, as well as the supporting information provided to support TSTF-448. SCE has concluded that the justifications presented in the TSTF proposal and the safety evaluation prepared by the NRC staff are applicable to San Onofre Nuclear Generating Station, Units 2 and 3, and justify this amendment for the incorporation of the changes to the San Onofre TSs.

2.2 *Optional Changes and Variations*

SCE is proposing one deviation from the TS changes described in the TSTF-448, Revision 3. The proposed TSs, consistent with TSTF-448, delete Surveillance Requirement 3.7.11.4, which requires a demonstration that the Control Room Emergency Air Cleanup System can pressurize the control room to 1/8" water gauge as compared to the atmosphere. Consistent with this change, SCE proposes to delete reference to the 1/8" criterion in the TS Bases as well as the air exchange rate, as these criteria could be confused as requirements for OPERABILITY of the system.

In addition, TSTF-448 also allows exceptions to the testing methods and frequencies described in Regulatory Guide 1.197, Regulatory Positions C.1 and C.2. SCE proposes the following exception:

Appropriate application of ASTM E-741 shall include the ability to take minor exceptions to the test methodology. These exceptions shall be documented in the test report.

This exception is necessary because the required testing methodology, ASTM-E741, was not originally intended for nuclear power plant control room envelope testing. Some minor exceptions from the standard are necessary and are usually determined by the test vendor. NEI 99-03, Revision 1, Appendix EE discusses exceptions typically

taken by ASTM E-741 test vendors. While not an all-inclusive list, the exceptions listed in Appendix EE provide examples of the type of exceptions that will be allowed by the proposed Control Room Envelope Habitability program. Any exceptions to the test methodology will be documented in the individual test report to ensure that the testing performed is in accordance with the Control Room Envelope Habitability Program requirements of proposed Technical Specification 5.5.2.16.c.

SCE is not proposing any variations or deviations from the applicable parts of the NRC staff's model safety evaluation dated January 17, 2007.

Section 3.3 of the NRC model safety evaluation provided several different evaluations that would be applicable to different sites due to site-specific physical configurations or licensing bases. The evaluations in Section 3.3 of the NRC model safety evaluation that are applicable to San Onofre Units 2 and 3 are Evaluation 1, Evaluation 4, Evaluation 6, and the final paragraph of Section 3.3.

2.3 *License Condition Regarding Initial Performance of New Surveillance and Assessment Requirements*

SCE proposes the following as a license condition for the San Onofre Units 2 and 3 licenses to support implementation of the proposed TS changes:

Upon implementation of Amendment No. XXX adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by SR 3.7.11.4, in accordance with TS 5.5.2.16.c.(i), the assessment of CRE habitability as required by Specification 5.5.2.16.c.(ii), and the measurement of CRE pressure as required by Specification 5.5.2.16.d, shall be considered met. Following implementation:

- (a) The first performance of SR 3.7.11.4, in accordance with Specification 5.5.2.16.c.(i), shall be within the specified frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from May 18, 2004, the date of the most recent successful tracer gas test, as stated in the September 17, 2004 letter response to Generic Letter 2003-01, 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 CRE habitability, Specification 5.5.2.16.c.(ii), shall be within 3 years, plus the 9-month allowance of SR 3.0.2, as measured from May 18, 2004, the date of the most recent successful tracer gas test, as stated in the September 17, 2004, letter response to Generic Letter 2003-01, or within the next 9 months if the time period since the most recent successful tracer gas is greater than 3 years.

- (c) The first performance of the periodic measurement of CRE pressure, Specification 5.5.2.16.d, shall be within 6 months.

3.0 REGULATORY ANALYSIS

3.1 *No Significant Hazards Consideration*

Southern California Edison (SCE) has reviewed the proposed no significant hazards consideration determination (NSHCD) published in the **Federal Register** as part of the Consolidated Line Item Improvement Process (CLIIP). SCE has concluded that the proposed NSHCD presented in the **Federal Register** notice is applicable to San Onofre Nuclear Generating Station, Units 2 and 3, and is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

3.2 *Commitments*

SCE is making no formal commitments that would derive from NRC approval of the proposed amendment.

4.0 ENVIRONMENTAL EVALUATION

SCE has reviewed the environmental evaluation included in the model safety evaluation dated January 17, 2007, as part of the CLIIP. SCE has concluded that the staff's findings presented in that evaluation are applicable to San Onofre Nuclear Generating Station, Units 2 and 3, and the evaluation is hereby incorporated by reference for this application.

Attachment A
(Existing Pages)
SONGS Unit 2

3.7 PLANT SYSTEMS

3.7.11 Control Room Emergency Air Cleanup System (CREACUS)

LCO 3.7.11 Two CREACUS trains shall be OPERABLE.

-----NOTE-----
The control room boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
During movement of irradiated fuel assemblies.

ACTIONS -----NOTES-----
1. The provisions of LCO 3.0.4 are not applicable when entering MODES 5, 6, or defueled configuration.
2. Each Unit shall enter applicable ACTIONS separately.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREACUS train inoperable.	A.1 Restore CREACUS train to OPERABLE status.	14 days
B. Two CREACUS trains inoperable due to inoperable control room boundary in Modes 1, 2, 3, or 4.	B.1 Restore control room boundary to OPERABLE status.	24 hours
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 5.	6 hours 36 hours (continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. Required Action and associated Completion Time of Condition A not met in MODES 5 or 6, or during movement of irradiated fuel assemblies.</p>	<p>D.1 Place OPERABLE CREACUS train in emergency radiation protection mode.</p>	<p>Immediately</p>
	<p><u>OR</u></p>	
	<p>D.2.1 Suspend CORE ALTERATIONS.</p>	<p>Immediately</p>
<p>E. Two CREACUS trains inoperable in MODES 5 or 6, or during movement of irradiated fuel assemblies.</p>	<p><u>AND</u></p>	
	<p>D.2.2 Suspend movement of irradiated fuel assemblies.</p>	<p>Immediately</p>
<p>F. Two CREACUS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.</p>	<p>F.1 Enter LCO 3.0.3.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.11.1 Operate each CREACUS train for ≥ 2 hours.	31 days
SR 3.7.11.2 Perform required CREACUS filter testing in accordance with Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.11.3 Verify each CREACUS train actuates on an actual or simulated actuation signal.	24 months
SR 3.7.11.4 Verify each CREACUS train can maintain a positive pressure of ≥ 0.125 inches water gauge, relative to the atmosphere during the emergency radiation state of the emergency mode of operation.	24 months

5.5 Procedures, Programs, and Manuals (continued)

5.5.2.15 Containment Leakage Rate Testing Program (Continued)

The provisions of Surveillance Requirement 3.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program. However, test frequencies specified in this Program may be extended consistent with the guidance provided in NEI 94-01, "Industry Guideline For Implementing Performance-Based Option Of 10CFR 50, Appendix J," as endorsed by Regulatory Guide 1.163. Specifically, NEI 94-01 has these provisions for test frequencies extension:

1. Consistent with standard scheduling practices for Technical Specifications Required Surveillances, intervals for recommended Type A testing may be extended by up to 15 months. This option should be used only in cases where refueling schedules have been changed to accommodate other factors.
2. Consistent with standard scheduling practices for Technical Specifications Required Surveillances, intervals for the recommended surveillance frequency for Type B and Type C testing may be extended by up to 25 percent of the test interval, not to exceed 15 months.

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

Attachment B
(Existing Pages)
SONGS Unit 3

3.7 PLANT SYSTEMS

3.7.11 Control Room Emergency Air Cleanup System (CREACUS)

LCO 3.7.11 Two CREACUS trains shall be OPERABLE.

-----NOTE-----
The control room boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
During movement of irradiated fuel assemblies.

ACTIONS -----NOTES-----
1. The provisions of LCO 3.0.4 are not applicable when entering MODES 5, 6, or defueled configuration.
2. Each Unit shall enter applicable ACTIONS separately.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREACUS train inoperable.	A.1 Restore CREACUS train to OPERABLE status.	14 days
B. Two CREACUS trains inoperable due to inoperable control room boundary in Modes 1, 2, 3, or 4.	B.1 Restore control room boundary to OPERABLE status.	24 hours
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.	C.1 Be in MODE 3.	6 hours
	<u>AND</u> C.2 Be in MODE 5.	36 hours

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. Required Action and associated Completion Time of Condition A not met in MODES 5 or 6, or during movement of irradiated fuel assemblies.</p>	<p>D.1 Place OPERABLE CREACUS train in emergency radiation protection mode.</p> <p><u>OR</u></p> <p>D.2.1 Suspend CORE ALTERATIONS.</p> <p><u>AND</u></p> <p>D.2.2 Suspend movement of irradiated fuel assemblies.</p>	<p>Immediately</p> <p>Immediately</p> <p>Immediately</p>
<p>E. Two CREACUS trains inoperable in MODES 5 or 6, or during movement of irradiated fuel assemblies.</p>	<p>E.1 Suspend CORE ALTERATIONS.</p> <p><u>AND</u></p> <p>E.2 Suspend movement of irradiated fuel assemblies.</p>	<p>Immediately</p> <p>Immediately</p>
<p>F. Two CREACUS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B).</p>	<p>F.1 Enter LCO 3.0.3.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Operate each CREACUS train for ≥ 2 hours.	31 days
SR 3.7.11.2	Perform required CREACUS filter testing in accordance with Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.11.3	Verify each CREACUS train actuates on an actual or simulated actuation signal.	24 months
SR 3.7.11.4	Verify each CREACUS train can maintain a positive pressure of ≥ 0.125 inches water gauge, relative to the atmosphere during the emergency radiation state of the emergency mode of operation.	24 months

5.5 Procedures, Programs, and Manuals (continued)

5.5.2.15 Containment Leakage Rate Testing Program (Continued)

The provisions of Surveillance Requirement 3.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program. However, test frequencies specified in this Program may be extended consistent with the guidance provided in NEI 94-01, "Industry Guideline For Implementing Performance-Based Option Of 10CFR 50, Appendix J," as endorsed by Regulatory Guide 1.163. Specifically, NEI 94-01 has these provisions for test frequencies extension:

1. Consistent with standard scheduling practices for Technical Specifications Required Surveillances, intervals for recommended Type A testing may be extended by up to 15 months. This option should be used only in cases where refueling schedules have been changed to accommodate other factors.
2. Consistent with standard scheduling practices for Technical Specifications Required Surveillances, intervals for the recommended surveillance frequency for Type B and Type C testing may be extended by up to 25 percent of the test interval, not to exceed 15 months.

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

Attachment C
(Proposed Pages)
(Redline and Strikeout)
SONGS Unit 2

3.7 PLANT SYSTEMS

3.7.11 Control Room Emergency Air Cleanup System (CREACUS)

LCO 3.7.11 Two CREACUS trains shall be OPERABLE.

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

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
 During movement of irradiated fuel assemblies.

ACTIONS -----NOTES-----
 1. The provisions of LCO 3.0.4 are not applicable when
 entering MODES 5, 6, or defueled configuration.
 2. Each Unit shall enter applicable ACTIONS separately.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREACUS train inoperable for reasons other than Conditions B.	A.1 Restore CREACUS train to OPERABLE status.	14 days
B. One or more CREACUS trains inoperable due to inoperable CRE control room boundary in Modes 1, 2, 3, or 4.	B.1 Initiate action to implement mitigating actions.	Immediately
	AND B.2 Verify mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits.	24 hours
	AND B.3 Restore CRE control room boundary to OPERABLE status.	24 hours 90 days (continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.</p>	<p>C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 5.</p>	<p>6 hours 36 hours</p>
<p>D. Required Action and associated Completion Time of Condition A not met in MODES 5 or 6, or during movement of irradiated fuel assemblies.</p>	<p>D.1 Place OPERABLE CREACUS train in emergency radiation protection mode. <u>OR</u> D.2.1 Suspend CORE ALTERATIONS. <u>AND</u> D.2.2 Suspend movement of irradiated fuel assemblies.</p>	<p>Immediately Immediately Immediately</p>
<p>E. Two CREACUS trains inoperable in MODES 5 or 6, or during movement of irradiated fuel assemblies.</p> <p><u>OR</u></p> <p>One or more CREACUS trains inoperable due to an inoperable CRE boundary in MODE 5 or 6, or during movement of irradiated fuel assemblies.</p>	<p>E.1 Suspend CORE ALTERATIONS. <u>AND</u> E.2 Suspend movement of irradiated fuel assemblies.</p>	<p>Immediately Immediately</p> <p>(continued)</p>

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two CREACUS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.11.1 Operate each CREACUS train for ≥ 2 hours.	31 days
SR 3.7.11.2 Perform required CREACUS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.11.3 Verify each CREACUS train actuates on an actual or simulated actuation signal.	24 months
SR 3.7.11.4 Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program. Verify each CREACUS train can maintain a positive pressure of ≥ 0.125 inches water gauge, relative to the atmosphere during the emergency radiation state of the emergency mode of operation.	In accordance with the Control Room Envelope Habitability Program 24 months

5.5 Procedures, Programs, and Manuals (continued)

5.5.2.15 Containment Leakage Rate Testing Program (Continued)

The provisions of Surveillance Requirement 3.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program. However, test frequencies specified in this Program may be extended consistent with the guidance provided in NEI 94-01, "Industry Guideline For Implementing Performance-Based Option Of 10CFR 50, Appendix J," as endorsed by Regulatory Guide 1.163. Specifically, NEI 94-01 has these provisions for test frequencies extension:

1. Consistent with standard scheduling practices for Technical Specifications Required Surveillances, intervals for recommended Type A testing may be extended by up to 15 months. This option should be used only in cases where refueling schedules have been changed to accommodate other factors.
2. Consistent with standard scheduling practices for Technical Specifications Required Surveillances, intervals for the recommended surveillance frequency for Type B and Type C testing may be extended by up to 25 percent of the test interval, not to exceed 15 months.

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

5.5.2.16 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 Air Cleanup System (CREACUS), 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 total effective dose equivalent (TEDE) for the duration of the accident. The program shall include the following elements:

- a. The definition of the CRE and the CRE boundary.
- b. Requirements for maintaining the CRE boundary in its design condition including configuration control and preventive maintenance.

(continued)

5.5 Procedures, Programs, and Manuals (continued)

5.5.2.16 Control Room Envelope Habitability Program (Continued)

- c. Requirements for (i) determining the unfiltered air leakage 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.

The following is an exception to Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0:

Appropriate application of ASTM E-741 shall include the ability to take minor exceptions to the test methodology. These exceptions shall be documented in the test report.

- d. Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one train of the CREACUS, operating at the flow rate required by the VFTP, at a frequency of 24 months on a STAGGERED TEST BASIS. The results shall be trended and used as part of the 24 month assessment of the CRE boundary.

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

- f. The provisions of SR 3.0.2 are applicable to the frequencies for assessing CRE habitability, determining CRE unfiltered leakage, and measuring CRE pressure and assessing the CRE boundary as required by paragraphs c and d, respectively.

Attachment D
(Proposed Pages)
(Redline and Strikeout)
SONGS Unit 3

3.7 PLANT SYSTEMS

3.7.11 Control Room Emergency Air Cleanup System (CREACUS)

LCO 3.7.11 Two CREACUS trains shall be OPERABLE.

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

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
During movement of irradiated fuel assemblies.

ACTIONS -----NOTES-----
1. The provisions of LCO 3.0.4 are not applicable when entering MODES 5, 6, or defueled configuration.
2. Each Unit shall enter applicable ACTIONS separately.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREACUS train inoperable for reasons other than Condition B.	A.1 Restore CREACUS train to OPERABLE status.	14 days
B. One or more CREACUS trains inoperable due to inoperable CRE control room boundary in Modes 1, 2, 3, or 4.	B.1 Initiate action to implement mitigating actions.	Immediately
	AND	
	B.2 Verify mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits.	24 hours
	AND	
	B.3 Restore CRE control room boundary to OPERABLE status.	24 hours 90 days (continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.</p>	<p>C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 5.</p>	<p>6 hours 36 hours</p>
<p>D. Required Action and associated Completion Time of Condition A not met in MODES 5 or 6, or during movement of irradiated fuel assemblies.</p>	<p>D.1 Place OPERABLE CREACUS train in emergency radiation protection mode. <u>OR</u> D.2.1 Suspend CORE ALTERATIONS. <u>AND</u> D.2.2 Suspend movement of irradiated fuel assemblies.</p>	<p>Immediately Immediately Immediately</p>
<p>E. Two CREACUS trains inoperable in MODES 5 or 6, or during movement of irradiated fuel assemblies.</p> <p><u>OR</u></p> <p>One or more CREACUS trains inoperable due to an inoperable CRE boundary in MODE 5 or 6, or during movement of irradiated fuel assemblies.</p>	<p>E.1 Suspend CORE ALTERATIONS. <u>AND</u> E.2 Suspend movement of irradiated fuel assemblies.</p>	<p>Immediately Immediately</p> <p>(continued)</p>

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two CREACUS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.11.1 Operate each CREACUS train for ≥ 2 hours.	31 days
SR 3.7.11.2 Perform required CREACUS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.11.3 Verify each CREACUS train actuates on an actual or simulated actuation signal.	24 months
SR 3.7.11.4 Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program. Verify each CREACUS train can maintain a positive pressure of ≥ 0.125 inches water gauge, relative to the atmosphere during the emergency radiation state of the emergency mode of operation.	24 months In accordance with the Control Room Envelope Habitability Program

5.5 Procedures, Programs, and Manuals (continued)

5.5.2.15 Containment Leakage Rate Testing Program (Continued)

The provisions of Surveillance Requirement 3.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program. However, test frequencies specified in this Program may be extended consistent with the guidance provided in NEI 94-01, "Industry Guideline For Implementing Performance-Based Option Of 10CFR 50, Appendix J," as endorsed by Regulatory Guide 1.163. Specifically, NEI 94-01 has these provisions for test frequencies extension:

1. Consistent with standard scheduling practices for Technical Specifications Required Surveillances, intervals for recommended Type A testing may be extended by up to 15 months. This option should be used only in cases where refueling schedules have been changed to accommodate other factors.
2. Consistent with standard scheduling practices for Technical Specifications Required Surveillances, intervals for the recommended surveillance frequency for Type B and Type C testing may be extended by up to 25 percent of the test interval, not to exceed 15 months.

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

5.5.2.16 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 Air Cleanup System (CREACUS), 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 total effective dose equivalent (TEDE) for the duration of the accident. The program shall include the following elements:

- a. The definition of the CRE and the CRE boundary.
- b. Requirements for maintaining the CRE boundary in its design condition including configuration control and preventive maintenance.

(continued)

5.5 Procedures, Programs, and Manuals (continued)

5.5.2.16 Control Room Envelope Habitability Program (Continued)

- c. Requirements for (i) determining the unfiltered air leakage 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.

The following is an exception to Section C.1 and C.2 of Regulatory Guide 1.197, Revision 0:

Appropriate application of ASTM E-741 shall include the ability to take minor exceptions to the test methodology. These exceptions shall be documented in the test report.

- d. Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one train of the CREACUS, operating at the flow rate required by the VFTP, at a Frequency of 24 months on a STAGGERED TEST BASIS. The results shall be trended and used as part of the 24 month assessment of the CRE boundary.

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

- f. The provisions of SR 3.0.2 are applicable to the Frequencies for assessing CRE habitability, determining CRE unfiltered leakage, and measuring CRE pressure and assessing the CRE boundary as required by paragraphs c and d, respectively.

Attachment E
(Proposed Pages)
SONGS Unit 2

3.7 PLANT SYSTEMS

3.7.11 Control Room Emergency Air Cleanup System (CREACUS)

LCO 3.7.11 Two CREACUS trains shall be OPERABLE.

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

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
During movement of irradiated fuel assemblies.

ACTIONS -----NOTES-----
1. The provisions of LCO 3.0.4 are not applicable when entering MODES 5, 6, or defueled configuration.
2. Each Unit shall enter applicable ACTIONS separately.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREACUS train inoperable for reasons other than Condition B.	A.1 Restore CREACUS train to OPERABLE status.	14 days
B. One or more CREACUS trains inoperable due to inoperable CRE boundary in Modes 1, 2, 3, or 4.	B.1 Initiate action to implement mitigating actions.	Immediately
	<u>AND</u> B.2 Verify mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits.	24 hours
	<u>AND</u> B.3 Restore CRE boundary to OPERABLE status.	90 days (continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two CREACUS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.11.1 Operate each CREACUS train for ≥ 2 hours.	31 days
SR 3.7.11.2 Perform required CREACUS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.11.3 Verify each CREACUS train actuates on an actual or simulated actuation signal.	24 months
SR 3.7.11.4 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 Procedures, Programs, and Manuals (continued)

5.5.2.15 Containment Leakage Rate Testing Program (Continued)

The provisions of Surveillance Requirement 3.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program. However, test frequencies specified in this Program may be extended consistent with the guidance provided in NEI 94-01, "Industry Guideline For Implementing Performance-Based Option Of 10CFR 50, Appendix J," as endorsed by Regulatory Guide 1.163. Specifically, NEI 94-01 has these provisions for test frequencies extension:

1. Consistent with standard scheduling practices for Technical Specifications Required Surveillances, intervals for recommended Type A testing may be extended by up to 15 months. This option should be used only in cases where refueling schedules have been changed to accommodate other factors.
2. Consistent with standard scheduling practices for Technical Specifications Required Surveillances, intervals for the recommended surveillance frequency for Type B and Type C testing may be extended by up to 25 percent of the test interval, not to exceed 15 months.

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

5.5.2.16 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 Air Cleanup System (CREACUS), 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 total effective dose equivalent (TEDE) for the duration of the accident. The program shall include the following elements:

- a. The definition of the CRE and the CRE boundary.
- b. Requirements for maintaining the CRE boundary in its design condition including configuration control and preventive maintenance.

(continued)

5.5 Procedures, Programs, and Manuals (continued)

5.5.2.16 Control Room Envelope Habitability Program (Continued)

- 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.

The following is an exception to Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.

Appropriate application of ASTM E-741 shall include the ability to take minor exceptions to the test methodology. These exceptions shall be documented in the test report.

- d. Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one train of the CREACUS, operating at the flow rate required by the VFTP, at a Frequency of 24 months on a STAGGERED TEST BASIS. The results shall be trended and used as part of the 24 month assessment of the CRE boundary.
- e. 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.
- f. The provisions of SR 3.0.2 are applicable to the Frequencies for assessing CRE habitability, determining CRE unfiltered inleakage, and measuring CRE pressure and assessing the CRE boundary as required by paragraphs c and d, respectively.
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Attachment F
(Proposed Pages)
SONGS Unit 3

3.7 PLANT SYSTEMS

3.7.11 Control Room Emergency Air Cleanup System (CREACUS)

LCO 3.7.11 Two CREACUS trains shall be OPERABLE.

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

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
During movement of irradiated fuel assemblies.

ACTIONS -----NOTES-----
1. The provisions of LCO 3.0.4 are not applicable when entering MODES 5, 6, or defueled configuration.
2. Each Unit shall enter applicable ACTIONS separately.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREACUS train inoperable for reasons other than Condition B.	A.1 Restore CREACUS train to OPERABLE status.	14 days
B. One or more CREACUS trains inoperable due to inoperable CRE boundary in Modes 1, 2, 3, or 4.	B.1 Initiate action to implement mitigating actions.	Immediately
	<u>AND</u> B.2 Verify mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits.	24 hours
	<u>AND</u> B.3 Restore CRE boundary to OPERABLE status.	90 days (continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two CREACUS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B).	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Operate each CREACUS train for ≥ 2 hours.	31 days
SR 3.7.11.2	Perform required CREACUS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.11.3	Verify each CREACUS train actuates on an actual or simulated actuation signal.	24 months
SR 3.7.11.4	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 Procedures, Programs, and Manuals (continued)

5.5.2.15 Containment Leakage Rate Testing Program (Continued)

The provisions of Surveillance Requirement 3.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program. However, test frequencies specified in this Program may be extended consistent with the guidance provided in NEI 94-01, "Industry Guideline For Implementing Performance-Based Option Of 10CFR 50, Appendix J," as endorsed by Regulatory Guide 1.163. Specifically, NEI 94-01 has these provisions for test frequencies extension:

1. Consistent with standard scheduling practices for Technical Specifications Required Surveillances, intervals for recommended Type A testing may be extended by up to 15 months. This option should be used only in cases where refueling schedules have been changed to accommodate other factors.
2. Consistent with standard scheduling practices for Technical Specifications Required Surveillances, intervals for the recommended surveillance frequency for Type B and Type C testing may be extended by up to 25 percent of the test interval, not to exceed 15 months.

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

5.5.2.16 Control Room Envelope Habitability Program

A Control Room Envelope Habitability Program shall be established and implemented to ensure that CRE habitability is maintained such that, with an OPERABLE Control Room Emergency Air Cleanup System (CREACUS), 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 total effective dose equivalent (TEDE) for the duration of the accident. The program shall include the following elements:

- a. The definition of the CRE and the CRE boundary.
- b. Requirements for maintaining the CRE boundary in its design condition including configuration control and preventive maintenance.

(continued)

5.5 Procedures, Programs, and Manuals (continued)

5.5.2.16 Control Room Envelope Habitability Program (Continued)

- c. Requirements for (i) determining the unfiltered air leakage 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.

The following is an exception to Sections C.1 and C.2 of regulatory Guide 1.197, Revision 0:

Appropriate application of ASTM E-741 shall include the ability to take minor exceptions to the test methodology. These exceptions shall be documented in the test report.

- d. Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one train of the CREACUS, operating at the flow rate required by the VFTP, at a Frequency of 24 months on a STAGGERED TEST BASIS. The results shall be trended and used as part of the 24 month assessment of the CRE boundary.
- e. The quantitative limits on unfiltered air leakage into the CRE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air leakage measured by the testing described in paragraph c. The unfiltered air leakage limit for radiological challenges is the leakage flow rate assumed in the licensing basis analyses of DBA consequences. Unfiltered air leakage limits for hazardous chemicals must ensure that exposure of CRE occupants to these hazards will be within the assumptions in the licensing basis.
- f. The provisions of SR 3.0.2 are applicable to the Frequencies for assessing CRE habitability, determining CRE unfiltered leakage, and measuring CRE pressure and assessing the CRE boundary as required by paragraphs c and d, respectively.
-

Attachment G

(Proposed Bases Pages (For Information Only) SONGS Unit 2)

B 3.7 PLANT SYSTEMS

B 3.7.11 Control Room Emergency Air Cleanup System (CREACUS)

BASES

BACKGROUND

The CREACUS provides a protected environment from which operators occupants can control the plant following an uncontrolled release of radioactivity, hazardous chemicals, or smoke.

The CREACUS consists of two independent, redundant trains that recirculate and filter the air in the control room air envelope (CRE) and a CRE boundary that limits the inleakage of unfiltered air. Each CREACUS train consists of emergency air conditioning unit, emergency ventilation air supply unit, emergency isolation dampers, and cooling coils and two cabinet coolers per Unit. Each emergency air conditioning unit includes a prefilter, a high efficiency particulate air (HEPA) filter, an activated carbon adsorber section for removal of gaseous activity (principally iodine iodines), and a fan. A second bank of HEPA filters follows the adsorber section to collect carbon fines. Each emergency ventilation air supply unit includes prefilter, HEPA filter, carbon adsorber, and fan. Ductwork, motor-operated dampers, doors, barriers, and instrumentation also form part of the system. Air and motor-operated dampers are provided for air volume control and system isolation purposes.

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 other 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 analyses of design basis accident (DBA) consequences to CRE occupants. The CRE and its boundary are defined in the Control Room Envelope Habitability Program.

(continued)

BASES (continued)

BACKGROUND
(continued)

Upon receipt of the actuating signal, normal air supply to the control room CRE is isolated, and the stream of ventilation air is recirculated through the system's filter trains. The prefilters remove any large particles in the air to prevent excessive loading of the HEPA filters and charcoal adsorbers. Continuous operation of each train for at least 15 minutes per month verifies proper system operability.

There are two CREACUS operational modes. Emergency mode is an operational mode when the control room is isolated to protect operational personnel from radioactive exposure through the duration of any one of the postulated limiting faults discussed in Chapter 15 UFSAR (Ref. 2). Isolation mode is an operational mode when the control room CRE is isolated to protect operational personnel from toxic gasses and smoke.

Actuation of the CREACUS places the system into either of two separate states of operation, depending on the initiation signal. Actuation of the system to either the emergency mode or isolation mode of CREACUS operation closes the unfiltered-outside-air intake and unfiltered exhaust dampers, and aligns the system for recirculation of control room air within the CRE through the redundant trains of HEPA and charcoal filters.

The emergency mode also initiates pressurization of the control room CRE. Outside air is added to the air being recirculated from the control room CRE. Pressurization of the control room prevents CRE minimizes infiltration of unfiltered air through the CRE boundary from all the surrounding areas of the building adjacent to the CRE boundary.

The control room CRE supply and the outside air supply of the normal control room HVAC are monitored by radiation and toxic-gas detectors respectively. One detector output above the setpoint will cause actuation of the emergency mode or isolation mode as required. The actions of the isolation mode are more restrictive, and will override the actions of the emergency mode of operation. However, toxic gas and radiation events are not considered to occur concurrently.

(continued)

BASES (continued)

BACKGROUND
(continued)

~~A single train will pressurize the control room to at least 0.125 inches water gauge and provides an air exchange rate in excess of 25% per hour. The CREACUS operation in maintaining the control room habitable is discussed in Reference 1.~~

Redundant recirculation trains provide the required filtration should an excessive pressure drop develop across the other filter train. Normally-open isolation dampers are arranged in series pairs so that one damper's failure to shut will not result in a breach of isolation. The CREACUS is designed in accordance with Seismic Category I requirements.

The CREACUS is designed to maintain the control room environment ~~a habitable environment in the CRE for 30 days of continuous occupancy after a Design Basis Accident (DBA) without exceeding a 5-rem whole-body dose~~ total effective dose equivalent (TEDE).

APPLICABLE
SAFETY ANALYSES

The CREACUS components are arranged in redundant, safety related ventilation trains. The location of components and ducting within the control room envelope CRE ensures an adequate supply of filtered air to all areas requiring access.

The CREACUS provides airborne radiological protection for the control room operators CRE occupants, as demonstrated by the control room accident CRE occupant dose analyses for the most limiting design basis loss of coolant accident fission product release presented in the UFSAR, Chapter 15 (Ref. 2).

Dose calculations, as specified in Unit 2/3 UFSAR Chapter 15 (Reference 2) (Table 15B-5, Appendix 15B), only take credit for the HEPA filters and charcoal adsorbers of the emergency recirculation air conditioning unit. The emergency ventilation supply unit is ~~designed to credited only with contributing to the pressurization of the control room to minimize 1/8 inch water gauge positive pressure (minimum) to prevent unfiltered inleakage as indicated in the Unit 2/3 UFSAR.~~

(continued)

BASES (continued)

APPLICABLE
SAFETY ANALYSES
(continued)

The analysis of toxic gas releases demonstrates that the toxicity limits are not exceeded in the control room following a toxic chemical release, as presented in Reference 1.

The CREACUS 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 (Ref. 3). 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 (Ref. 4).

The worst case single active failure of a component of the CREACUS, assuming a loss of offsite power, does not impair the ability of the system to perform its design function.

The CREACUS satisfies Criterion 3 of the NRC Policy Statement.

LCO

Two independent and redundant trains of the CREACUS are required to be OPERABLE to ensure that at least one is available, assuming that if a single active failure disables the other train. Total system failure, such as from a loss of both ventilation trains or from an inoperable CRE boundary, could result in a control room operator receiving exceeding a dose in excess of 5 rem TEDE to the CRE occupants in the event of a large radioactive release.

The Each CREACUS train is considered OPERABLE when the individual components necessary to control operator limit CRE occupant exposure are OPERABLE in both trains. A CREACUS train is considered OPERABLE when the associated:

- a. Fan is OPERABLE;
- b. HEPA filters and charcoal adsorber are not excessively restricting flow, and are capable of performing their filtration functions; and

(continued)

BASES (continued)

LCO
(continued)

- c. Ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained. If an Emergency Isolation Damper is stuck open, the associated train of CREACUS may still be considered OPERABLE if the redundant damper in series with the inoperable damper is closed with power removed.

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

~~In addition, the control room boundary must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors.~~

The LCO is modified by a Note allowing the control room 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 control room 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 control room CRE isolation is indicated.

(continued)

BASES (continued)

APPLICABILITY

In MODES 1, 2, 3, and 4, 5, and 6, and during movement of irradiated fuel assemblies the CREACUS must be OPERABLE to ~~limit operator exposure~~ ensure that the CRE will remain habitable during and following a DBA.

In MODES 5 and 6, the CREACUS is required to cope with the release from a rupture of a waste gas tank.

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

ACTIONS

ACTION statements are modified by two NOTES. NOTE 1 says: "The provisions of LCO 3.0.4 are not applicable when entering MODES 5, 6, or defueled configuration."

Specification 3.0.4 establishes that entry into an operational mode or other specified condition shall not be made unless the conditions of the LCO are met.

Applicability statement "During movement of irradiated fuel assemblies" ensures the OPERABILITY of both CREACUS trains prior to the start of movement of irradiated fuel assemblies.

NOTE 2 says: "Each Unit shall enter applicable ACTIONS separately." CREACUS is a shared system between Unit 2 and Unit 3. LCO doesn't address the operational situation when the Units are in different operational MODES. Without this NOTE it may not be clear what ACTIONS should be taken.

(continued)

BASES (continued)

ACTIONS
(continued)

A.1

With one CREACUS train inoperable, for reasons other than an inoperable CRE boundary, action must be taken to restore OPERABLE status within 14 days. The 14 day AOT is based on a probabilistic risk assessment that does not require administrative controls to be implemented when a CREACUS train is taken out of service. In this Condition, the remaining OPERABLE CREACUS subsystem train is adequate to perform control room radiation the CRE occupant protection function.

However, the overall reliability is reduced because a single failure in the OPERABLE CREACUS train could result in loss of CREACUS function. The 14 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.

B.1, B.2, and B.3

If the control room boundary is inoperable in MODES 1, 2, 3, or 4, the CREACUS trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE control room boundary within 24 hours. During the period that the control room boundary is inoperable, appropriate compensatory measures (consistent with the intent of GDC19) should be utilized to protect control room operators from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and physical security. Preplanned measures should be available to address these concerns for intentional and unintentional entry into the condition. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of compensatory measures. The 24 hour Completion Time is a typically reasonable time to diagnose, plan and possibly repair, and test most problems with the control room boundary.

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.

BASES (continued)

ACTIONS B.1, B.2, and B.3
(continued)

During the period that the CRE boundary is considered inoperable, action must be initiated to implement mitigating actions to lessen the effect on CRE occupants from the potential hazards of a radiological or chemical event or a challenge from smoke. 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 analyses 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 low probability of a DBA occurring during this time period, and the use of mitigating actions. The 90 day Completion Time 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 problems with the CRE boundary.

C.1 and C.2

If in Modes 1, 2, 3, or 4, if the inoperable CREACUS or the control room CRE boundary cannot be restored to OPERABLE status within the associated required Completion Time in ~~MODE 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.

BASES (continued)

ACTIONS
(continued)

D.1, D.2.1, and D.2.2

In MODE 5 or 6, or during movement of irradiated fuel assemblies, if Required Action A.1 cannot be completed within the required Completion Time, the OPERABLE CREACUS train must be immediately placed in the emergency mode of operation. This action ensures that the remaining train is OPERABLE, that no failures preventing automatic actuation will occur, and that any active failure will be readily detected.

An alternative to Required Action D.1 is to immediately suspend activities that could result in a release of radioactivity that might require isolation of the control room CRE. 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.

E.1 and E.2

When in MODES 5 or 6, or during movement of irradiated fuel assemblies with two trains inoperable or with one or more CREACUS trains inoperable due to an inoperable CRE boundary, action must be taken immediately to suspend activities that could result in a release of radioactivity that might enter the control room CRE. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel to a safe position.

F.1

If both CREACUS trains are inoperable in MODE 1, 2, 3, or 4 for reasons other than an inoperable control room CRE boundary (i.e., Condition B), the CREACUS 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.

(continued)

BASES (continued)

SURVEILLANCE
REQUIREMENTS

SR 3.7.11.1

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 train once every month provides an adequate check on this system.

Cumulative operation of the system for at least 2 hours over a 31 day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The 2 hour time frame is based on a conservative engineering evaluation which calculated the time required to evaporate the moisture contained in the air trapped inside the CREACUS duct upstream of charcoal beds. The 31 day Frequency is based on the known reliability of the equipment, and the two train redundancy available.

SR 3.7.11.2

This SR verifies that the required CREACUS testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The CREACUS filter tests are based on Regulatory Guide 1.52 (Ref. 53). 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.

The filtration efficiency only apply to the emergency recirculation air conditioning units E418 and E419. Therefore, testing for filtration efficiency is not required for the emergency ventilation supply units A206 and A207.

However, the specified air flow from the emergency ventilation units is required during the filtration efficiency testing of the emergency recirculation air conditioning units. Also, the air flow requirements which are specified in the VFTP apply to the emergency ventilation and emergency air conditioning units.

(continued)

BASES (continued)

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.7.11.3

This SR verifies that each CREACUS train starts and operates on an actual or simulated actuation signal. The Frequency of 24 months is consistent with that specified in Reference 3- is based on industry operating experience and is consistent with the typical refueling cycle.

SR 3.7.11.4

This SR verifies the integrity of the control room enclosure and the assumed inleakage rates of potentially contaminated air. The control room positive pressure, with respect to potentially contaminated atmosphere, is periodically tested to verify proper function of the CREACUS. During the emergency radiation state of the emergency mode of operation, the CREACUS is designed to pressurize the control room ≥ 0.125 inches water gauge positive pressure with respect to the atmosphere in order to prevent unfiltered inleakage. The CREACUS is designed to maintain this positive pressure with one train.

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 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 B must be entered. Required Action B.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 Regulatory Guide 1.196, Section C.2.7.3, (Ref. 6) which endorses, with exceptions, NEI 99-03, Section

(continued)

BASES (continued)

SURVEILLANCE SR 3.7.11.4
REQUIREMENTS

(continued)

8.4 and Appendix F (Ref. 7). These compensatory measures may also be used as mitigating actions as required by Required Action B.2. Temporary analytical methods may also be used as compensatory measures to restore OPERABILITY (Ref. 8). Options for restoring the CRE boundary to OPERABLE status include changing the licensing basis DBA consequence 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.

REFERENCES

1. UFSAR, Section 9.4.
2. UFSAR, Chapter 15.
3. UFSAR, Section 6.4
4. UFSAR, Section 9.5
5. Regulatory Guide 1.52 (Rev. 2).
6. Regulatory Guide 1.196
7. NEI 99-03, "Control Room Habitability Assessment," June 2001.
8. Letter from Eric J. Leeds (NRC) to James W. Davis (NEI) dated January 30, 2004, "NEI Draft White Paper, Use of Generic Letter 91-18 Process and Alternative Source Terms in the Context of Control Room Habitability." (ADAMS Accession No. ML040300694).

Attachment H
(Proposed Bases Pages (For Information Only) SONGS Unit 3)

B 3.7 PLANT SYSTEMS

B 3.7.11 Control Room Emergency Air Cleanup System (CREACUS)

BASES

BACKGROUND

The CREACUS provides a protected environment from which operators occupants can control the plant following an uncontrolled release of radioactivity, hazardous chemicals, or smoke.

The CREACUS consists of two independent redundant trains that recirculate and filter the air in the control room air envelope (CRF) and a CRE boundary that limits the inleakage of unfiltered air. Each CREACUS train consists of emergency air conditioning unit, emergency ventilation air supply unit, emergency isolation dampers, and cooling coils and two cabinet coolers per Unit. Each emergency air conditioning unit includes a prefilter, a high efficiency particulate air (HEPA) filter, an activated carbon adsorber section for removal of gaseous activity (principally iodine iodines), and a fan. A second bank of HEPA filters follows the adsorber section to collect carbon fines. Each emergency ventilation air supply unit includes prefilter, HEPA filter, carbon adsorber, and fan. Ductwork, motor-operated dampers, doors, barriers, and instrumentation also form part of the system. Air and motor-operated dampers are provided for air volume control and system isolation purposes.

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 other 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 analyses of design basis accident (DBA) consequences to CRE occupants. The CRE and its boundary are defined in the Control Room Envelope Habitability Program.

(continued)

BASES (continued)

BACKGROUND
(continued)

Upon receipt of the actuating signal, normal air supply to the control room CRE is isolated, and the stream of ventilation air is recirculated through the system's filter trains. The prefilters remove any large particles in the air to prevent excessive loading of the HEPA filters and charcoal adsorbers. Continuous operation of each train for at least 15 minutes per month verifies proper system operability.

There are two CREACUS operational modes. Emergency mode is an operational mode when the control room is isolated to protect operational personnel from radioactive exposure through the duration of any one of the postulated limiting faults discussed in Chapter 15 UFSAR (Ref. 2). Isolation mode is an operational mode when the control room CRE is isolated to protect operational personnel from toxic gasses and smoke.

Actuation of the CREACUS places the system into either of two separate states of operation, depending on the initiation signal. Actuation of the system to either the emergency mode or isolation mode of CREACUS operation closes the unfiltered-outside-air intake and unfiltered exhaust dampers, and aligns the system for recirculation of control room air within the CRE through the redundant trains of HEPA and charcoal filters.

The emergency mode also initiates pressurization of the control room CRE. Outside air is added to the air being recirculated from the control room CRE. Pressurization of the control room prevents CRE minimizes infiltration of unfiltered air through the CRE boundary from all the surrounding areas of the building adjacent to the CRE boundary.

The control room CRE supply and the outside air supply of the normal control room HVAC are monitored by radiation and toxic-gas detectors respectively. One detector output above the setpoint will cause actuation of the emergency mode or isolation mode as required. The actions of the isolation mode are more restrictive, and will override the actions of the emergency mode of operation. However, toxic gas and radiation events are not considered to occur concurrently.

(continued)

BASES (continued)

BACKGROUND
(continued)

~~A single train will pressurize the control room to at least 0.125 inches water gauge, and provides an air exchange rate in excess of 25% per hour. The CREACUS operation in maintaining the control room habitable is discussed in Reference 1.~~

Redundant recirculation trains provide the required filtration should an excessive pressure drop develop across the other filter train. Normally-open isolation dampers are arranged in series pairs so that one damper's failure to shut will not result in a breach of isolation. The CREACUS is designed in accordance with Seismic Category I requirements.

The CREACUS is designed to maintain the control room environment a habitable environment in the CRE for 30 days of continuous occupancy after a Design Basis Accident (DBA) without exceeding a 5-rem whole-body dose total effective dose equivalent (TEDE).

APPLICABLE
SAFETY ANALYSES

The CREACUS components are arranged in redundant safety related ventilation trains. The location of components and ducting within the control room envelope CRE ensures an adequate supply of filtered air to all areas requiring access.

The CREACUS provides airborne radiological protection for the control room operators CRE occupants, as demonstrated by the control room accident CRE occupant dose analyses for the most limiting design basis loss of coolant accident fission product release presented in the UFSAR, Chapter 15 (Ref. 2).

Dose calculations, as specified in Unit 2/3 UFSAR Chapter 15 (Reference 2) (Table 15B-5, Appendix 15B), only take credit for the HEPA filters and charcoal adsorbers of the emergency recirculation air conditioning unit. The emergency ventilation supply unit is designed to credited only with contributing to the pressurization of the control room to minimize 1/8 inch water gauge positive pressure (minimum) to prevent unfiltered inleakage as indicated in the Unit 2/3 UFSAR.

(continued)

BASES (continued)

APPLICABLE
SAFETY ANALYSES
(continued)

~~The analysis of toxic gas releases demonstrates that the toxicity limits are not exceeded in the control room following a toxic chemical release, as presented in Reference 1.~~

The CREACUS provides protection from smoke and hazardous chemicals to the control room occupants. The analysis of hazardous chemical releases demonstrates that the toxicity limits are not exceeded in the CRE following a hazardous chemical release (Ref. 3). 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 (Ref. 4)

The worst case single active failure of a component of the CREACUS, assuming a loss of offsite power, does not impair the ability of the system to perform its design function.

The CREACUS satisfies Criterion 3 of the NRC Policy Statement.

LCO

Two independent and redundant trains of the CREACUS are required to be OPERABLE to ensure that at least one is available, assuming that if a single active failure disables the other train. Total system failure, such as from a loss of both ventilation trains or from an inoperable CRE boundary, could result in a control room operator receiving exceeding a dose in excess of 5 rem TEDE in the event of a large radioactive release.

The Each CREACUS train is considered OPERABLE when the individual components necessary to control operator limit CRE occupant exposure are OPERABLE in both trains. A CREACUS train is considered OPERABLE when the associated:

- a. Fan is OPERABLE;
- b. HEPA filters and charcoal adsorber are not excessively restricting flow, and are capable of performing their filtration functions; and

(continued)

BASES (continued)

LCO
(continued)

- c. Ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained. If an Emergency Isolation Damper is stuck open, the associated train of CREACUS may still be considered OPERABLE if the redundant damper in series with the inoperable damper is closed with power removed.

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

In addition, the control room boundary must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors.

The LCO is modified by a Note allowing the control room 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 control room 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 control room CRE isolation is indicated.

(continued)

BASES (continued)

APPLICABILITY

In MODES 1, 2, 3, and 4, 5, and 6 and during movement of irradiated fuel assemblies, the CREACUS must be OPERABLE to ~~limit operator exposure~~ ensure that the CRE will remain habitable during and following a DBA.

In MODES 5 and 6, the CREACUS is required to cope with the release from a rupture of a waste gas tank.

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

ACTIONS

ACTION statements are modified by two NOTES. NOTE 1 says: "The provisions of LCO 3.0.4 are not applicable when entering MODES 5, 6, or defueled configuration."

Specification 3.0.4 establishes that entry into an operational mode or other specified condition shall not be made unless the conditions of the LCO are met. Applicability statement "During movement of irradiated fuel assemblies" ensures the OPERABILITY of both CREACUS trains prior to the start of movement of irradiated fuel assemblies.

NOTE 2 says: "Each Unit shall enter applicable ACTIONS separately." CREACUS is a shared system between Unit 2 and Unit 3. LCO doesn't address the operational situation when the Units are in different operational MODES. Without this NOTE it may not be clear what ACTIONS should be taken.

(continued)

BASES (continued)

ACTIONS
(continued)

A.1

With one CREACUS train inoperable, for reasons other than an inoperable CRE boundary, action must be taken to restore OPERABLE status within 14 days. The 14 day AOT is based on a probabilistic risk assessment that does not require administrative controls to be implemented when a CREACUS train is taken out of service. In this condition, the remaining OPERABLE CREACUS subsystem train is adequate to perform control room radiation the CRE occupant protection function.

However, the overall reliability is reduced because a single failure in the OPERABLE CREACUS train could result in loss of CREACUS function. The 14 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.

B.1, B.2, and B.3

~~If the control room boundary is inoperable in MODES 1, 2, 3, or 4, the CREACUS trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE control room boundary within 24 hours. During the period that the control room boundary is inoperable, appropriate compensatory measures (consistent with the intent of GDC19) should be utilized to protect control room operators from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and physical security. Preplanned measures should be available to address these concerns for intentional and unintentional entry into the condition. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of compensatory measures. The 24 hour Completion Time is a typically reasonable time to diagnose, plan and possibly repair, and test most problems with the control room boundary.~~

~~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.~~

(continued)

BASES (continued)

ACTIONS B.1, B.2, B.3
(continued)

During the period that the CRE boundary is considered inoperable, action must be initiated to implement mitigating actions to lessen the effect on CRE occupants from the potential hazards of a radiological or chemical event or a challenge from smoke. 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 analyses of DBA consequences, and the 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 low probability of a DBA occurring during this time period, and the use of mitigating actions. The 90 day Completion Time 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 problems with the CRE boundary.

C.1 and C.2

If In Modes 1, 2, 3, or 4, if the inoperable CREACUS or the control room CRE boundary cannot be restored to OPERABLE status within the associated required Completion Time in MODE 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.

(continued)

BASES (continued)

ACTIONS
(continued)

D.1, D.2.1, and D.2.2

In MODE 5 or 6, or during movement of irradiated fuel assemblies, if Required Action A.1 cannot be completed within the required Completion Time, the OPERABLE CREACUS train must be immediately placed in the emergency mode of operation. This action ensures that the remaining train is OPERABLE, that no failures preventing automatic actuation will occur, and that any active failure will be readily detected.

An alternative to Required Action D.1 is to immediately suspend activities that could result in a release of radioactivity that might require isolation of the control room CRE. 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.

E.1 and E.2

When in MODES 5 or 6, or during movement of irradiated fuel assemblies with two trains inoperable or with one or more CREACUS trains inoperable due to an inoperable CRE boundary, action must be taken immediately to suspend activities that could result in a release of radioactivity that might enter the control room CRE. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel to a safe position.

F.1

If both CREACUS trains are inoperable in MODE 1, 2, 3, or 4 for reasons other than an inoperable control room CRE boundary (i.e., Condition B), the CREACUS 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.

(continued)

BASES (continued)

SURVEILLANCE
REQUIREMENTS

SR 3.7.11.1

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 train once every month provides an adequate check on this system.

Cumulative operation of the system for at least 2 hours over a 31 day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The 2 hour time frame is based on a conservative engineering evaluation which calculated the time required to evaporate the moisture contained in the air trapped inside the CREACUS duct upstream of charcoal beds. The 31 day Frequency is based on the known reliability of the equipment, and the two train redundancy available.

SR 3.7.11.2

This SR verifies that the required CREACUS testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The CREACUS filter tests are based on Regulatory Guide 1.52 (Ref. 53). 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.

The filtration efficiency only apply to the emergency recirculation air conditioning units E418 and E419. Therefore, testing for filtration efficiency is not required for the emergency ventilation supply units A206 and A207.

However, the specified air flow from the emergency ventilation units is required during the filtration efficiency testing of the emergency recirculation air conditioning units. Also, the air flow requirements which are specified in the VFTP apply to the emergency ventilation and emergency air conditioning units.

(continued)

BASES (continued)

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.7.11.3

This SR verifies that each CREACUS train starts and operates on an actual or simulated actuation signal. The Frequency of 24 months is consistent with that specified in Reference 3. is based on industry operating experience and is consistent with the typical refueling cycle.

SR 3.7.11.4

~~This SR verifies the integrity of the control room enclosure and the assumed leakage rates of potentially contaminated air. The control room positive pressure, with respect to potentially contaminated atmosphere, is periodically tested to verify proper function of the CREACUS. During the emergency radiation state of the emergency mode of operation, the CREACUS is designed to pressurize the control room \geq 0.125 inches water gauge positive pressure with respect to the atmosphere in order to prevent unfiltered leakage. The CREACUS is designed to maintain this positive pressure with one train.~~

This SR verifies the OPERABILITY of the CRE boundary by testing for unfiltered air leakage 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 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 leakage into the CRE is no greater than the flow rate assumed in the licensing basis analyses of DBA consequences. When unfiltered air leakage is greater than the assumed flow rate, Condition B must be entered. Required Action B.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 Regulatory Guide 1.196, Section C.2.7.3, (Ref. 6) which endorses, with exceptions, NEI 99-03, Section

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS
SR 3.7.11.4

(continued)

8.4 and Appendix F (Ref. 7). These compensatory measures may also be used as mitigating actions as required by Required Action B.2. Temporary analytical methods may also be used as compensatory measures to restore OPERABILITY (Ref. 8). Options for restoring the CRE boundary to OPERABLE status include changing the licensing basis DBA consequence 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.

REFERENCES

1. UFSAR, Section 9.4.
2. UFSAR, Chapter 15.
3. UFSAR, Section 6.4.
4. UFSAR, Section 9.5.
- 3 5. Regulatory Guide 1.52 (Rev. 2).
6. Regulatory Guide 1.196
7. NEI 99-03, "Control Room Habitability Assessment," June 2001.
8. Letter from Eric J. Leeds (NRC) to James W. Davis (NEI) dated January 30, 2004, "NEI Draft White Paper, Use of Generic Letter 91-18 Process and Alternative Source Terms in the Context of Control Room Habitability." (ADAMS Accession No. ML040300694).