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NLS2008009
January 14, 2008

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Subject: Application to Revise Technical Specifications Regarding Control Room Envelope Habitability in Accordance With TSTF-448-A, Revision 3, Using the Consolidated Line Item Improvement Process
Cooper Nuclear Station, Docket No. 50-298, DPR-46

Dear Sir or Madam:

The purpose of this letter is for the Nebraska Public Power District (NPPD) to request an amendment to Facility Operating License DPR-46 in accordance with the provisions of 10 CFR 50.90 to revise the Technical Specifications (TS) for Cooper Nuclear Station (CNS).

The proposed license amendment request (LAR) would modify TS requirements related to control room envelope habitability in accordance with Technical Specification Task Force (TSTF) traveler TSTF-448-A, "Control Room Habitability," Revision 3.

Attachment 1 provides a description of the proposed changes, the requested confirmation of applicability, and plant-specific verifications. Attachment 2 provides the existing TS pages marked up to show the proposed changes. Attachment 3 provides revised TS pages in final typed format. Attachment 4 provides existing TS Bases pages marked up to show the proposed changes. No regulatory commitments are made in this submittal.

NPPD requests approval of the proposed license amendment by January 14, 2009, with the amendment being implemented within 180 days following issuance.

In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being provided to the State of Nebraska official. Copies are also being provided to the Nuclear Regulatory Commission (NRC) Region IV office and the CNS Resident Inspector in accordance with 10 CFR 50.4(b)(1).

COOPER NUCLEAR STATION
P.O. Box 98 / Brownville, NE 68321-0098
Telephone: *(402) 825-3811 /* ***Fax:*** *(402) 825-5211*
www.nppd.com

A001
NRR

The proposed TS changes have been reviewed by the necessary safety review committees (Station Operations Review Committee and Safety Review and Audit Board). Amendments to the CNS Facility Operating License through Amendment 228, dated December 4, 2007, have been incorporated into this request. This request is submitted under oath pursuant to 10 CFR 50.30(b).

If you have any questions concerning this matter, please contact David W. Van Der Kamp, Licensing Manager, at (402) 825-2904.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 14 January 08
(date)

Sincerely,

Stewart B. Minahan
Vice President – Nuclear and
Chief Nuclear Officer

/rr

Attachments

cc: Regional Administrator w/ attachments
USNRC - Region IV

Cooper Project Manager w/ attachments
USNRC - NRR Project Directorate IV-1

Senior Resident Inspector w/ attachments
USNRC - CNS

Nebraska Health and Human Services w/ attachments
Department of Regulation and Licensure

NPG Distribution w/o attachments

CNS Records w/ attachments

Attachment 1

Application to Revise Technical Specifications Regarding Control Room Envelope Habitability in Accordance With TSTF-448-A, Revision 3, Using the Consolidated Line Item Improvement Process

Description and Assessment

Cooper Nuclear Station, Docket No. 50-298, DPR-46

Technical Specification Pages

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3.7-9
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1.0 Description

The proposed amendment would modify the Cooper Nuclear Station (CNS) Technical Specification (TS) requirements related to control room envelope (CRE) habitability in TS Section 3.7.4, "Control Room Emergency Filter (CREF) System," and TS Section 5.5, "Programs and Manuals."

The changes are consistent with Nuclear Regulatory Commission (NRC) approved Industry/Technical Specification Task Force (TSTF) Standard TS (STS) change TSTF-448-A, Revision 3. The availability of this proposed TS change was published in the **Federal Register** on January 17, 2007, as part of the consolidated line item improvement process (CLIIP).

2.0 Assessment

2.1 Applicability of Published Safety Evaluation

Nebraska Public Power District (NPPD) has reviewed the safety evaluation (SE) dated January 17, 2007, as part of the CLIIP Notice of Availability. This review included a review of the NRC staff's evaluation, as well as the supporting information provided to support TSTF-448-A. NPPD has concluded that the justifications presented in the TSTF proposal and the SE prepared by the NRC staff are applicable to CNS, and justify this amendment for the incorporation of the changes to the CNS TS.

2.2 Optional Changes and Variations

NPPD is proposing two deviations from the TS changes described in TSTF-448-A, Rev. 3, and one deviation from the NRC staff's model SE. The deviations from the TSTF and the

basis for the deviations are addressed in the following Part A. The deviation from the model SE and the basis for the deviation are addressed in Part B. The parts of the model SE applicable to CNS are identified in Part C.

Part A: Deviations from TS changes of TSTF-448-A, Rev. 3

1. In TS Section 3.7.4 of TSTF-448-A, Condition A refers to one subsystem inoperable, Condition B refers to one or more subsystems inoperable, and Conditions E and F refer to two subsystems inoperable. The equivalent conditions in the proposed CNS TS (Conditions A, B, and D) refer to the entire CREF System, and not to one or two subsystems. There is no condition in the CNS TS equivalent to Condition E.

   Basis for the Deviation

   The CREF System at CNS is a single-train system. CNS was licensed with a single-train CREF System. The CNS TS issued as part of the original license, as well as the TS issued with the conversion to STS (in accordance with NUREG-1433, Revision 1), were based on a single-train system.

2. In TS Section 3.7.4 of TSTF-448-A, the action specified in Required Action B.2 is to verify that mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits. This is revised to remove reference to limits on smoke hazards. B.2 will now require verifying that mitigating actions ensure CRE occupant exposures to radiological and chemical hazards will not exceed limits, and that CRE occupants are protected from smoke hazards.

   Basis for the Deviation

   Numerical limits exist on radiological exposures and hazardous chemicals, but do not exist on exposure to smoke. The NRC documented their concurrence with removing the reference to smoke in letter from T. J. Kobetz of the NRC to Technical Specification Task Force dated May 12, 2006, (ADAMS Accession No. ML061310293), based on quantitative limits on exposure to smoke do not exist.

Part B: Deviation from Model SE

Section 2.3 of the model SE discusses General Design Criteria (GDC) of Appendix A to 10 CFR 50 that are applicable to this issue. The applicable criteria discussed were GDC 1, 2, 3, 4, 5, and 19. The model SE recognizes that some facilities are not licensed under these GDC, but are licensed under similar design criteria. CNS is licensed under similar criteria, as discussed in Appendix F of the Updated Safety Analysis Report (USAR).

Basis for the Deviation

CNS was designed and constructed to meet the intent of the proposed 70 GDC for Nuclear Power Plants issued by the Atomic Energy Agency (AEC), as originally proposed in July

1967. The final GDC of Appendix A to 10 CFR 50 had not been adopted as regulatory requirements at the time the CNS design was being finalized. Thus, the proposed 70 GDC constitute the licensing basis for CNS, except where specific commitments have been made to the 1971 GDC. The AEC conducted their technical review of the CNS design against the July 1971 GDC, and concluded that the CNS design conforms to the intent of the 1971 GDC. The 1967 Proposed GDC and CNS conformance with the criteria are discussed in Appendix F of the CNS USAR.

The following Table 1, "Comparison of General Design Criteria Versus CNS USAR Appendix F Criteria," presents a summary of the CNS licensing basis criteria that are equivalent to each of the GDC from 10 CFR 50 Appendix A discussed in the model SE.

Table 1
Comparison of General Design Criteria versus CNS USAR Appendix F Criteria

10 CFR 50 Appendix A, General Design Criteria		**CNS USAR Appendix F, "Conformance to AEC Proposed General Design Criteria"**	
GDC Number	**Summary Statement of GDC**	**Criterion Number**	**Summary Statement of CNS Criterion**
GDC 1	Structures, systems, and components (SSCs) important to safety shall be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety functions to be performed.	Criterion 1	Those systems and components of reactor facilities which are essential to the prevention of accidents which could affect the public health and safety or to mitigation of their consequences shall be designed, fabricated, and erected to quality standards that reflect the importance of the safety function to be performed.
GDC 2	SSCs important to safety shall be designed to withstand the effects of earthquakes, tornadoes, hurricanes, floods, and other phenomena without loss of capability to perform their safety functions.	Criterion 2	Those systems and components of reactor facilities which are essential to the prevention of accidents which could affect the public health and safety or to mitigation of their consequences shall be designed, fabricated, and erected to performance standards that will allow the plant to withstand additional forces imposed by natural phenomena.
GDC 3	SSCs important to safety shall be designed and located to minimize the probability and effect of fires and explosions. Non-combustible materials shall be used throughout the plant.	Criterion 3	In accordance with 10 CFR 50.48(a), CNS is required to have a fire protection plan that is in compliance with 1971 GDC 3. Conformance with Draft GDC 3 is therefore superseded in its entirety by 1971 GDC 3.

10 CFR 50 Appendix A, General Design Criteria		CNS USAR Appendix F, "Conformance to AEC Proposed General Design Criteria"	
GDC Number	**Summary Statement of GDC**	**Criterion Number**	**Summary Statement of CNS Criterion**
GDC 4	SSCs important to safety shall be designed to accommodate the effects of the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents.	N/A	(An equivalent proposed GDC was not proposed). The CNS Environmental Qualification Program complies with 10 CFR 50.49. Systems and equipment which are required to function after accidents or transients are designed to withstand the most severe forces and environmental effects, including missiles from equipment failures. A High Energy Line Break (HELB) study demonstrated that the safe shutdown ability of CNS would not be degraded by a HELB. This study included the effects of pipe whip.
GDC 5	SSCs important to safety shall not be shared among nuclear power units unless such sharing does not significantly impair the ability to perform safety functions.	N/A	CNS is a single unit nuclear power plant. Thus, this GDC is not applicable to CNS.
GDC 19	A control room shall be provided from which actions can be taken to operate the reactor safely and to maintain the reactor in a safe condition under accident conditions.	Criterion 11	CNS is committed to the radiation protection provisions of the 1971 GDC 19 for the dose from a loss-of-coolant accident (LOCA) and to the limits of 10 CFR 50.67 for the fuel handling accident (FHA). The CNS control room has adequate shielding to ensure personnel will not receive a radiation exposure in excess of 5 rem whole body for the duration of a LOCA or 5 Rem Total Effective Dose Equivalent (TEDE) for the duration of the FHA.

Part C: Parts of the Model SE Applicable to CNS.

The following subsections of Section 3.0 in the Model SE are applicable to CNS:

1. Evaluation 2 (for facilities that have not yet adopted TSTF-287-A, Revision 5);
2. Evaluation 5 (for BWR4 and BWR6 TS); and
3. Evaluation 6 (for facilities that have a CRE pressurization surveillance requirement).

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

NPPD proposes the following as a license condition to support implementation of the proposed TS changes:

Upon implementation of Amendment No. xxx adopting TSTF-448-A, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by SR 3.7.4.4, in accordance with Specification 5.5.13.c.(i), the assessment of CRE habitability as required by Specification 5.5.13.c.(ii), and the measurement of CRE pressure as required by Specification 5.5.13.d, shall be considered met. Following implementation:

(a) The first performance of SR 3.7.4.4, in accordance with Specification 5.5.13.c.(i), shall be within the specified Frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from July 12, 2004, the date of the most recent successful tracer gas test. (The tracer gas test was stated to have been performed in July, 2004, in the September 30, 2004 letter response to Generic Letter 2003-01).

(b) The first performance of the periodic assessment of CRE habitability, Specification 5.5.13.c.(ii), shall be within the next 9 months.

(c) The first performance of the periodic measurement of CRE pressure, Specification 5.5.13.d, shall be within 18 months, plus the 138 days allowed by SR 3.0.2, as measured from May 4, 2007, the date of the most recent successful pressure measurement test.

3.0 Regulatory Analysis

3.1 No Significant Hazards Consideration Determination

Nebraska Public Power District (NPPD) has reviewed the proposed no significant hazards consideration determination (NSHCD) published in the **Federal Register** as part of the CLIIP. NPPD has concluded that the proposed NSHCD presented in the **Federal Register** is applicable to Cooper Nuclear Station and is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

3.2 Commitments

NPPD is not making any regulatory commitments as part of this submittal.

4.0 Environmental Evaluation

NPPD has reviewed the environmental evaluation included in the model SE dated January 17, 2007, as part of the CLIIP. NPPD has concluded that the staff's findings presented in that evaluation are applicable to CNS and the evaluation is hereby incorporated by reference for this application.

Attachment 2

Mark-Up of Proposed Technical Specification Revisions

Cooper Nuclear Station, Docket No. 50-298, DPR-46

Technical Specification Pages

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3.7-9
3.7-10
5.0-17
5.0-18

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

3.7 PLANT SYSTEMS

3.7.4 Control Room Emergency Filter (CREF) System

LCO 3.7.4 The CREF System shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
During movement of lately irradiated fuel assemblies in the secondary containment,
During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. CREF System inoperable. For reasons other than Condition B.	A.1 Restore CREF System to OPERABLE status.	7 days
~~B.~~ C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	~~B~~ C.1 Be in MODE 3. AND ~~B~~ C.2 Be in MODE 4.	12 hours 36 hours

(continued)

B. CREF System inoperable due to inoperable CRE boundary in MODE 1, 2, or 3.	B.1 Initiate action to implement mitigating actions. AND B.2 Verify mitigating actions ensure CRE occupant exposures to radiological and chemical hazards will not exceed limits, and CRE occupants are protected from smoke hazards. AND B.3 Restore CRE boundary to OPERABLE status.	Immediately 24 hours 90 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~C~~ D. Required Action and associated Completion Time of Condition A not met during movement of lately irradiated fuel assemblies in the secondary containment or during OPDRVs.	----------NOTE---------- LCO 3.0.3 is not applicable. ----------	
	~~C~~ D.1 Suspend movement of lately irradiated fuel assemblies in the secondary containment.	Immediately
	AND	
	~~C~~ D.2 Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Operate the CREF System for ≥ 15 minutes.	31 days

(continued)

OR

CREF System inoperable due to an inoperable CRE boundary during movement of lately irradiated fuel assemblies in the secondary containment or during OPDRVs.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.4.2	Perform required CREF filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP.
SR 3.7.4.3	Verify the CREF System actuates on an actual or simulated initiation signal.	18 months
SR 3.7.4.4	~~Verify the CREF System can maintain a positive pressure of ≥ 0.1 inches water gauge relative to the adjacent areas during the pressurization mode of operation at a flow rate of ≤ 990 cfm.~~	~~18 months~~

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

5.5.12 Primary Containment Leakage Rate Testing Program (continued)

5. Exemption from Section III.B of 10CFR Part 50, Appendix J, Option B, to allow the contribution from MSIV leakage to be excluded from the sum of the leakage rates from Type B and Type C tests (October 30, 2006).

b. The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a, is 58.0 psig. The containment design pressure is 56.0 psig.

c. The maximum allowable containment leakage rate, L_a, at P_a, shall be 0.635% of containment air weight per day.

d. Leakage Rate acceptance criteria are:

1. Containment leakage rate acceptance criterion is $\leq$ 1.0 L_a. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are, <0.60 L_a for the Type B and C tests and $\leq$ 0.75 L_a for Type A tests.

2. Air lock testing acceptance criteria are:

a. Overall air lock leakage rate is $\leq$ 12 scfh when tested at $\geq P_a$.

b. Overall air lock leakage rate is $\leq$ 0.23 scfh when tested at $\geq$ 3.0 psig.

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

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

Insert "5.5.13, Control Room Envelope Habitability Program" (attached)

5.5.13 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 Filter (CREF) System, 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 either (a) 5 rem whole body or its equivalent to any part of the body for the duration of the loss-of-coolant accident, or (b) 5 rem total effective dose equivalent (TEDE) for the duration of the fuel handling accident. The program shall include the following elements:

a. The definition of the CRE and CRE boundary.

b. Requirements for maintaining the 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. No exceptions to Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0, are proposed.

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 the CREF System, operating at the flow rate required by the Ventilation Filter Testing Program, at a Frequency of 18 months. The results shall be trended and used as part of the periodic 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.

Attachment 3

Final Typed Proposed Technical Specifications

Cooper Nuclear Station, Docket No. 50-298, DPR-46

Revised Technical Specification Pages

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Repaginated Technical Specification Pages

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5.0-22
5.0-23

3.7 PLANT SYSTEMS

3.7.4 Control Room Emergency Filter (CREF) System

LCO 3.7.4 The CREF System shall be OPERABLE.

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

APPLICABILITY: MODES 1, 2, and 3,
During movement of lately irradiated fuel assemblies in the secondary containment,
During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. CREF System inoperable for reasons other than Condition B.	A.1 Restore CREF System to OPERABLE status.	7 days
B. CREF System inoperable due to inoperable CRE boundary in MODE 1, 2, or 3.	B.1 Initiate action to implement mitigating actions.	Immediately
	AND	
	B.2 Verify mitigating actions ensure CRE occupant exposures to radiological and chemical hazards will not exceed limits, and CRE occupants are protected from smoke hazards.	24 hours
	AND	
	B.3 Restore CRE boundary to OPERABLE status.	90 days
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	C.1 Be in MODE 3.	12 hours
	AND	
	C.2 Be in MODE 4.	36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A not met during movement of lately irradiated fuel assemblies in the secondary containment or during OPDRVs. OR CREF System inoperable due to an inoperable CRE boundary during movement of lately irradiated fuel assemblies in the secondary containment or during OPDRVs.	----------NOTE---------- LCO 3.0.3 is not applicable. ---------- D.1 Suspend movement of lately irradiated fuel assemblies in the secondary containment. AND D.2 Initiate action to suspend OPDRVs.	 Immediately Immediately

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Operate the CREF System for ≥ 15 minutes.	31 days
SR 3.7.4.2	Perform required CREF filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP.
SR 3.7.4.3	Verify the CREF System actuates on an actual or simulated initiation signal.	18 months
SR 3.7.4.4	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

5.5.12 Primary Containment Leakage Rate Testing Program (continued)

5. Exemption from Section III.B of 10CFR Part 50, Appendix J, Option B, to allow the contribution from MSIV leakage to be excluded from the sum of the leakage rates from Type B and Type C tests (October 30, 2006).

b. The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a, is 58.0 psig. The containment design pressure is 56.0 psig.

c. The maximum allowable containment leakage rate, L_a, at P_a, shall be 0.635% of containment air weight per day.

d. Leakage Rate acceptance criteria are:

1. Containment leakage rate acceptance criterion is $\leq$ 1.0 L_a. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are, <0.60 L_a for the Type B and C tests and $\leq$ 0.75 L_a for Type A tests.

2. Air lock testing acceptance criteria are:

a. Overall air lock leakage rate is $\leq$ 12 scfh when tested at $\geq P_a$.

b. Overall air lock leakage rate is $\leq$ 0.23 scfh when tested at $\geq$ 3.0 psig.

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

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

5.5.13 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 Filter (CREF) System, 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

(continued)

5.5 Programs and Manuals

5.5.13 Control Room Envelope Habitability Program (continued)

personnel receiving radiation exposures in excess of either (a) 5 rem whole body or its equivalent to any part of the body for the duration of the loss-of-coolant accident, or (b) 5 rem total effective dose equivalent (TEDE) for the duration of the fuel handling accident. The program shall include the following elements:

a. The definition of the CRE and CRE boundary.

b. Requirements for maintaining the 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. No exceptions to Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0, are proposed.

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 the CREF System, operating at the flow rate required by the Ventilation Filter Testing Program, at a Frequency of 18 months. The results shall be trended and used as part of the periodic 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 air inleakage, and measuring CRE pressure and assessing the CRE boundary as required by paragraphs c and d, respectively.

5.0 ADMINISTRATIVE CONTROLS

5.6 Reporting Requirements

The following reports shall be submitted in accordance with 10 CFR 50.4.

5.6.1 (Deleted)

5.6.2 Annual Radiological Environmental Report

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted by May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the radiological environmental monitoring program for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Assessment Manual (ODAM), and in 10 CFR 50, Appendix I, Sections IV.B.2, IV.B.3, and IV.C.

The Annual Radiological Environmental Operating Report shall include the results of analyses of all radiological environmental samples and of all environmental radiation measurements taken during the period pursuant to the locations specified in the table and figures in the ODAM, as well as summarized and tabulated results of these analyses and measurements in the format of the table in Regulatory Guide 4.8, December 1975. In the event that some individual results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted in a supplementary report as soon as possible.

(continued)

5.6 Reporting Requirements (continued)

5.6.3 Radioactive Effluent Release Report

The Radioactive Effluent Release Report covering the operation of the unit shall be submitted in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODAM and the Process Control Program and in conformance with 10 CFR 50.36a and 10 CFR 50, Appendix I, Section IV.B.1.

5.6.4 (Deleted)

5.6.5 CORE OPERATING LIMITS REPORT (COLR)

a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:

   1. The Average Planar Linear Heat Generation Rates for Specification 3.2.1.

   2. The Minimum Critical Power Ratio for Specifications 3.2.2 and 3.7.7.

   3. The three Rod Block Monitor Upscale Allowable Values for Specification 3.3.2.1.

   4. The power/flow map defining the Stability Exclusion Region for Specification 3.4.1.

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:

   1. NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel" (Revision specified in the COLR).

(continued)

5.6 Reporting Requirements

5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

2. NEDE-23785-1-P-A, "The GESTR-LOCA and SAFER Models for the Evaluation of the Loss-of-Coolant Accident", Volume III, Revision 1, October 1984.

3. NEDO-31960 and NEDO-31960 Supplement 1, "BWR Owner's Group Long-Term Stability Solutions Licensing Methodology" (the approved Revision at the time the reload analysis is performed).

c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.

d. The COLR, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

5.6.6 Post Accident Monitoring (PAM) Instrumentation Report

When a report is required by Condition B or F of LCO 3.3.3.1, "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days. The report shall outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.

5.0 ADMINISTRATIVE CONTROLS

5.7 High Radiation Area

5.7.1 In lieu of the "control device" or "alarm signal" required by paragraph 20.1601 of 10 CFR Part 20, each high radiation area in which the deep dose equivalent in excess of 100 mrem but less than 1000 mrem in one hour (measurement made at 12 inches from source of radiation) shall be barricaded (barricade will impede physical movement across the entrance or access to the high radiation area; i.e., doors, yellow and magenta rope, turnstile) and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Special Work Permit (SWP). Radiation protection personnel or personnel escorted by radiation protection personnel shall be exempt from the SWP issuance requirement during the performance of their assigned duties, provided they are otherwise following plant radiation protection procedures for entry into high radiation areas. Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

a. A monitoring device which continuously indicates the radiation dose rate in the area.

b. A monitoring device which continuously integrates the radiation dose in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rates in the area have been established and personnel have been made knowledgeable of them.

c. A radiation protection qualified individual (i.e., qualified in radiation protection procedures), with a dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic dose rate monitoring at the frequency specified by Health Physics supervision.

5.7.2 In addition to the requirements of Specification 5.7.1, areas accessible to personnel with dose rates such that a major portion of the body could receive in 1 hour a deep dose equivalent in excess of 1000 mrem (measurement made at 12 inches from source of radiation) shall be provided with locked doors to prevent unauthorized entry. Doors shall remain locked except during periods of access by personnel under an approved SWP which shall specify the dose rates in the immediate work area. For individual high radiation areas accessible to personnel that are located within large areas, such as the containment, or areas where no enclosure exists for purposes of locking and no enclosure can be reasonably constructed around the individual areas, then that area shall be barricaded and conspicuously posted. Area radiation monitors that have been set to alarm if radiation levels increase,

(continued)

5.7 High Radiation Area

5.7.2 (continued)

provide both a visual and an audible signal to alert personnel in the area of the increase. These monitors may be used to meet Specification 5.7.1.a provided that the dose rates and alarms have been established by radiation protection personnel. Stay times or continuous surveillance, direct or remote (such as use of closed circuit TV cameras), may be made by personnel qualified in radiation protection procedures to provide additional positive exposure control over the activities within the area.

Attachment 4

Proposed Technical Specifications Bases Revisions (Markup)

Cooper Nuclear Station, Docket No. 50-298, DPR-46

Technical Specification Bases Pages

B 3.7-17
B 3.7-18
B 3.7-19
B 3.7-20
B 3.7-21
B 3.7-22
B 3.7-23
B 3.7-24

Note: TS Bases pages are provided for information. The TS Bases will be revised in accordance with TS 5.5.10, "Technical Specification (TS) Bases Control Program," as part of implementing the license amendment following issuance.

B 3.7 PLANT SYSTEMS

B 3.7.4 Control Room Emergency Filter System

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BACKGROUND

The CREF System provides a *protected environment from which occupants can control the unit following an uncontrolled release of radioactivity, hazardous chemicals, or smoke*. ~~radiologically controlled environment from which the unit can be safely operated following a Design Basis Accident (DBA).~~

The safety related function of the CREF System includes a single high efficiency air filtration system for emergency treatment of ~~recirculated air or~~ outside supply air *and a CRE boundary that limits the inleakage of unfiltered air*. The system consists of a prefilter, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section, a supply fan, an emergency booster fan, an exhaust booster fan, and the associated ductwork, ~~and~~ *valves or* dampers, *doors, barriers, and instrumentation*. Prefilters and HEPA filters remove particulate matter, which may be radioactive. The charcoal adsorbers provide a holdup period for gaseous iodine, allowing time for decay.

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 leakage of unfiltered air into the CRE will not exceed the inleakage assumed in the licensing basis analysis of design basis accident (DBA) (loss-of-coolant and fuel handling accidents only) consequences to CRE occupants. The CRE and its boundary are defined in the Control Room Envelope Habitability Program.

The CREF System is a standby system. Upon receipt of the initiation signal(s) (indicative of conditions that could result in radiation exposure to *CRE occupants* ~~control room personnel~~), the CREF System automatically switches to the emergency bypass mode of operation to minimize infiltration of contaminated air into the *CRE* ~~control room~~. A system of dampers isolates the *normal outside air intake path* ~~control room~~, and the ~~recirculated~~ outside air is routed through the filter system. Outside air is taken in at the normal ventilation intake. ~~and is mixed with the~~

BASES

~~recirculated air after being passed through the charcoal adsorber filter for removal of airborne radioactive particles.~~

The CREF System is designed to maintain *a habitable environment in the CRE* ~~the control room environment~~ for a ~~200-man~~ 30-day continuous occupancy after a DBA without exceeding 5 rem whole body dose or its equivalent to any part of the body *following a loss-of-coolant accident (LOCA) (Ref. 8) or 5 rem total effective dose equivalent (TEDE) following a fuel handling accident (FHA).* The CREF System will pressurize the *CRE* ~~control room to ≥ 0.1 inches water gauge~~ *relative to external areas adjacent to the CRE boundary to minimize* ~~to prevent~~ infiltration of air from *all surrounding areas adjacent to the CRE boundary* ~~surrounding buildings and the outside atmosphere~~. CREF System operation in maintaining ~~control room~~ *CRE* habitability is discussed in the USAR, Chapters X and XIV, (Refs. 1 and 2, respectively).

APPLICABLE SAFETY ANALYSES

The ability of the CREF System to maintain the habitability of the ~~control room~~ *CRE* is an explicit assumption for the safety analyses presented in the USAR, Chapters X and XIV (Refs. 1 and 2, respectively). The CREF System is assumed to operate following a loss of coolant accident and a fuel handling accident involving handling lately irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 7 days).

The CRE boundary provides protection from smoke and hazardous chemicals to the CRE occupants by manual isolation after detecting the presence of smoke and chemicals. 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 (Ref. 5).

The CREF System satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii) (Ref. 4).

LCO

The CREF System is required to be OPERABLE, since total system failure*, such as from an inoperable CRE boundary,* could result in exceeding a dose of 5 rem *whole body dose or its equivalent to any part of the body following a LOCA or 5 rem TEDE following a FHA* to the *CRE occupants* ~~control room operators in the event of a DBA~~.

The CREF System is considered OPERABLE when the individual components necessary to *limit CRE occupant* ~~control operator~~ exposure are OPERABLE. The system is considered OPERABLE when its associated:

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a. Fans are OPERABLE (one supply fan, the emergency booster fan and the exhaust booster fan);

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

c. Ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

~~In addition, the control room boundary must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors, such that the pressurization limit of SR 3.7.4.4 can be met.~~ *In order for the CREF System 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 analyses for DBAs, and that CRE occupants are protected from hazardous chemicals and smoke.* ~~However, it is acceptable for access doors to be open for normal control room entry and exit, and not consider it to be a failure to meet the LCO.~~

The LCO is modified by a 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. Application of the Note allows the LCO to be considered as met because the boundary can be restored to its design condition by quickly closing the door, hatch, floor plug, or access panel, 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 a need for CRE isolation is indicated. For these openings the LCO is considered as not met, and the Conditions and Required Actions are to be entered.

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APPLICABILITY

In MODES 1, 2, and 3, the CREF System must be OPERABLE to *ensure that the CRE will remain habitable* ~~control operator exposure~~ during and following a DBA, since the DBA could lead to a fission product release.

In MODES 4 and 5, the probability and consequences of a DBA are reduced because of the pressure and temperature limitations in these MODES. Therefore, maintaining the CREF System OPERABLE is not required in MODE 4 or 5, except for the following situations under which significant radioactive releases can be postulated:

a. During operations with *a* potential for draining the reactor vessel (OPDRVs); and

b. During movement of lately irradiated fuel assemblies in the secondary containment. Due to radioactive decay, the CREF System is only required to be OPERABLE during fuel handling involving handling lately irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 7 days).

ACTIONS

A.1

When inoperable for reasons other than an inoperable CRE boundary, ~~T~~the inoperable CREF System must be restored to OPERABLE status within 7 days. With the unit in this condition, there is no other system to perform *the CRE occupant* ~~control room radiation~~ protection *function*. The 7 day Completion Time is based on the low probability of a DBA occurring during this time period.

B.1, B.2, and B.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 whole body or its equivalent to any part of the body following a LOCA or 5 rem TEDE following a FHA), or inadequate protection of CRE occupants from hazardous chemicals or smoke, the CRE boundary is inoperable. The CRE boundary must be restored to OPERABLE status within 90 days."

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ACTIONS

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.

~~B.1 and B.2~~ *C.1 and C.2*

In MODE 1, 2, or 3, if the inoperable CREF System *or the CRE boundary* cannot be restored to OPERABLE status within the ~~associated~~ *required* Completion Time, the unit must be placed in a MODE that minimizes *accident* risk. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours and in MODE 4 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.

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ACTIONS

~~C.1, C.2, and C.3~~ *D.1 and D.2*

The Required Actions of Condition ~~C~~ *D* are modified by a Note indicating that LCO 3.0.3 does not apply. If moving lately irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, inability to suspend movement of lately irradiated fuel assemblies is not sufficient reason to require a reactor shutdown.

During movement of lately irradiated fuel assemblies in the secondary containment or during OPDRVs, if the inoperable CREF System cannot be restored to OPERABLE status within the required Completion Time, *or with the CREF System inoperable due to an inoperable CRE boundary,* activities that present a potential for releasing radioactivity that might require isolation of the *CRE* ~~control room~~ must be immediately suspended. This places the unit in a condition that minimizes *the accident* risk.

If applicable, movement of lately irradiated fuel assemblies in the secondary containment must be suspended immediately. Suspension of these activities shall not preclude completion of movement of a component to a safe position. Also, if applicable, actions must be initiated immediately to suspend OPDRVs to minimize the probability of a vessel draindown and the subsequent potential for fission product release. Actions must continue until the OPDRVs are suspended.

SURVEILLANCE REQUIREMENTS

SR 3.7.4.1

This SR verifies that the CREF System in a standby mode starts on demand and continues to operate. The system should be checked periodically to ensure that it starts and functions properly. As the environmental and normal operating conditions of this system are not severe, testing the system once every month provides an adequate check on this system. Since the CREF System does not contain heaters, the system need only be operated for $\geq$ 15 minutes to demonstrate the function of the system. The 31 day Frequency is based on the known reliability of the equipment.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.4.2

This SR verifies that the required CREF testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). 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 ~~f~~Frequencies and additional information are discussed in detail in the VFTP.

SR 3.7.4.3

This SR verifies that on an actual or simulated initiation signal, the CREF System starts and operates. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.7.1, "Control Room Emergency Filter (CREF) System Instrumentation," overlaps this SR to provide complete testing of the safety function. *The Frequency of 18 months is based on industry operating experience and is consistent with the typical refueling cycle.* ~~The 18 month Frequency is specified in Reference 4.~~

SR 3.7.4.4

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 this 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 whole body or its equivalent to any part of the body following a LOCA or 5 rem TEDE following a FHA 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. 4) which endorses, with exceptions, NEI 99-03,

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Section 8.4 and Appendix F (Ref. 6). 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. 7). 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.

~~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 adjacent areas, is periodically tested to verify proper function of the CREF System. During the emergency mode of operation, the CREF System is designed to slightly pressurize the control room ≥ 0.1 inches water gauge positive pressure with respect to the adjacent areas to prevent unfiltered inleakage. The CREF System is designed to maintain this positive pressure at a flow rate of ≤ 990 cfm to the control room in the pressurization mode. The Frequency of 18 months is consistent with industry practice and other filtration systems SRs.~~

REFERENCES

1. USAR, Chapter X.
2. USAR, Chapter XIV.
3. 10 CFR 50.36(c)(2)(ii).
4. Regulatory Guide *1.196* ~~1.52, Revision 2, March 1978.~~
5. *USAR, Section X-10.4.6.5*
6. *NEI 99-03, "Control Room Habitability Assessment Guidance," June 2001.*
7. *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. ML040160868).*
8. *Standard Review Plan (NUREG-0800, Rev. 2), Table 6.4-1, from Section 6.4.*

Correspondence Number: NLS2008009

The following table identifies those actions committed to by Nebraska Public Power District (NPPD) in this document. Any other actions discussed in the submittal represent intended or planned actions by NPPD. They are described for information only and are not regulatory commitments. Please notify the Licensing Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

COMMITMENT	COMMITMENT NUMBER	COMMITTED DATE OR OUTAGE
None		