Entergy

Entergy Nuclear Operations, Inc.
Palisades Nuclear Plant
27780 Blue Star Memorial Highway
Covert, MI 49043

August 21, 2007 10 CFR 50.90

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

Palisades Nuclear Plant
Docket 50-255
License No. DPR-20

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

Dear Sir or Madam:

Pursuant to 10 CFR 50.90, Entergy Nuclear Operations, Inc. (ENO) requests Nuclear Regulatory Commission (NRC) review and approval of a proposed license amendment to Renewed Facility Operating License DPR-20 for the Palisades Nuclear Plant (PNP). ENO proposes to revise Technical Specification (TS) 3.7.10, "Control Room Ventilation (CRV) Filtration," and add a new administrative controls program as TS 5.5.16, "Control Room Envelope Habitability Program."

ENO proposes to incorporate changes based on NRC-approved Technical Specification Task Force (TSTF) TSTF-448-A, "Control Room Habitability," revision 3. The availability of this TS improvement was noticed in the Federal Register on January 17, 2007 (72 FR 2022), as part of the consolidated line item improvement process. The proposed changes include deviations from the NRC-approved TSTF. Deviations have been made to reflect the facility specific nomenclature, reference, or system description, and to establish consistency with the current PNP TS.

Enclosure 1 provides a description of the proposed changes, the requested confirmation of applicability, and plant-specific verifications. Enclosure 2 provides the existing TS pages marked up to show the proposed changes. Enclosure 3 provides the revised (clean) TS pages. Enclosure 4 provides existing TS Bases pages marked up to show the proposed changes, and is provided for information only.

ENO requests approval of this proposed license amendment by September 1, 2008, with a 120-day implementation period.

A copy of this request has been provided to the designated representative of the State of Michigan.

Summary of Commitments

This letter contains no new commitments and no revisions to existing commitments.

I declare under penalty of perjury that the foregoing is true and correct. Executed on August 21, 2007.

Christopher J. Schwarz
Site Vice President
Palisades Nuclear Plant

Enclosures (4)

CC Regional Administrator, Region III, USNRC
Project Manager, Palisades, USNRC
NRC Resident Inspector, Palisades USNRC

ENCLOSURE 1
DESCRIPTION OF REQUESTED CHANGES

1.0 DESCRIPTION

Entergy Nuclear Operations, Inc. (ENO) proposes to modify Technical Specification (TS) requirements related to control room envelope habitability in TS 3.7.10, "Control Room Ventilation (CRV) Filtration," and TS Section 5.5, "Administrative Controls - Programs and Manuals."

The changes are consistent with Nuclear Regulatory Commission (NRC)-approved Technical Specification Task Force (TSTF) Standard Technical Specification (STS) change TSTF-448-A, "Control Room Habitability," 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 (CLIIP).

2.0 ASSESSMENT

2.1 Applicability of Published Safety Evaluation

ENO has reviewed the safety evaluation dated January 17, 2007, as part of the CLIIP. This review included a review of the NRC staff's evaluation, as well as the supporting information provided to support TSTF-448-A, revision 3. ENO has concluded that the justifications presented in the TSTF proposal and the safety evaluation prepared by the NRC staff are applicable to Palisades Nuclear Plant (PNP) and justify this amendment for the incorporation of the changes to the PNP TS.

2.2 Optional Changes and Variations

ENO is proposing minor variations and deviations from the TS changes described in TSTF-448-A, revision 3, or the applicable parts of the NRC staff's model safety evaluation dated January 17, 2007. The deviations are provided below. The proposed deviations reflect plant-specific design, current licensing basis, and plant-specific variations from NUREG-1432, "Standard Technical Specifications Combustion Engineering Plants."

Deviations have been made to reflect the facility specific nomenclature, reference, or system description. "Control Room Ventilation Filtration" is used in lieu of "Control Room Emergency Air Cleanup System." This change was made during the PNP conversion to the NUREG-1432 format TS, which the NRC approved on November 30, 1999. Additionally, PNP does not have demisters. Accordingly, the reference to demisters in model safety evaluation Section 2.2 is not applicable to PNP.

ENCLOSURE 1
DESCRIPTION OF REQUESTED CHANGES

A deviation was made to the wording of TS 3.7.10 Condition B, Required Action B.2, to reflect the PNP design. The design basis for the CRV Filtration does not include quantitative limits for exposure to chemical or smoke hazards. A hazardous chemical evaluation was performed in accordance with Regulatory Guide 1.78, "Evaluating the Habitability of a Nuclear Power Plant Control Room during a Postulated Hazardous Chemical Release," dated December 2001. The evaluation did not credit CRV Filtration and showed that CRE occupants are protected from hazardous chemical releases. A habitability assessment for smoke was performed in accordance with Regulatory Guide 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," dated May 2003. The assessment documented the qualitative assessment of smoke events at PNP. Smoke from a single credible onsite smoke event will not enter both the control room envelope (CRE) and alternate shut down panel area. Therefore, CRV Filtration is not required to demonstrate a habitable CRE following chemical or smoke releases.

PNP does not have a toxic gas initiation signal or equivalent. Current PNP TS does not have the note above STS 3.7.10, Required Action D.1. Therefore, the change to the note is not applicable.

Deviations have been made to establish consistency with the current PNP TS. During the conversion to the STS format, references to Modes 5 and 6 were removed from TS 3.7.10, Conditions D and E. These conditions do not reference specific modes; however, the conditions are applicable during core alterations, during movement of irradiated fuel assemblies, or during movement of a fuel cask in or over the spent fuel pool. ENO proposes to retain current licensing basis requirements. Therefore, the proposed revision to TS 3.7.10, Condition E, does not contain Mode references.

The proposed TS require moving information from the current pages to different pages. As shown in the proposed changes, TS 3.7.10, Condition C would move from page 3.7.10-1 to 3.7.10-2 to accommodate the additional text in Condition B. Additionally, TS 3.7.10, Condition E would move from page 3.7.10-2 to 3.7.10-3 due to this addition. Also, TS 3.7.10 Surveillance Requirements would move from page 3.7.10-3 to new 3.7.10-4.

Page numbering for TS Section 5.5 would be affected by the addition of TS 5.5.16, "Control Room Habitability Program." Currently TS pages 5.0-14 to 5.0-16 are blank pages retained for page numbering. TS pages 5.0-17 to 5.0-23 would be renumbered to become pages 5.0-14 to 5.0-20. The proposed addition of TS 5.5.16 is provided on page 5.0-21. TS

pages 5.0-22 and 5.0-23 would be retained for numbering. The remaining pages in TS Section 5.5 would remain unaffected by these page numbering changes.

For the above page number changes, the corresponding Amendment numbers have been changed to reflect the Amendment numbers associated with the text.

ENO reviewed the TS Bases changes provided with TSTF-448-A. ENO's proposed TS Bases changes meet the intent of the TSTF-448-A changes and are included in Enclosure 4 for information only.

The deviations provided above do not affect the no significant hazards consideration determination (NSHCD) or the environmental evaluation dated January 17, 2007, as part of the CLIIP. The proposed deviations reflect plant-specific design, current licensing basis, and plant-specific variations from NUREG-1432.

ENO proposes changes based upon Evaluation 1 of the model safety evaluation. These changes would revise the action requirements of TS 3.7.10 to acknowledge that an inoperable CRE boundary, depending upon the location of the associated degradation, could cause just one, instead of both CRV Filtration trains to be inoperable. This is accomplished by revising Condition A to exclude Condition B, and revising Condition B to address one or more CRV Filtration trains, as follows:

- Condition A: One CRV Filtration train inoperable for reasons other than Condition B.
- Condition B: One or more CRV Filtration trains inoperable due to inoperable CRE boundary in MODE 1, 2, 3, or 4.

This change clarifies how to apply the action requirements in the event just one CRV Filtration train is unable to ensure CRE occupant safety within licensing basis limits because of an inoperable CRE boundary. It enhances the usability of Conditions A and B with a presentation that is more consistent with the intent of the existing requirements. This change is an administrative change because it neither reduces nor increases the existing action requirements, and, therefore, is acceptable.

ENO proposes to replace existing Required Action B.1, "Restore control room boundary to OPERABLE status," which has a 24-hour Completion Time, with Required Action B.1, to immediately initiate action to implement mitigating actions; Required Action B.2, to verify, within 24 hours, that in the event of a design-basis accident (DBA), CRE occupant radiological

exposures will not exceed the calculated dose of the licensing basis analyses of DBA consequences, and that CRE occupants are protected from hazardous chemicals and smoke; and Required Action B.3, to restore CRE boundary to operable status within 90 days.

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

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

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

Upon implementation of Amendment XXX adopting TSTF-448-A, revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by SR 3.7.10.4, in accordance with TS 5.5.16.c.(i), the assessment of CRE habitability as required by Specification 5.5.16.c.(ii), and the measurement of CRE pressure as required by Specification 5.5.16.d, shall be considered met. Following implementation:

(a) The first performance of SR 3.7.10.4, in accordance with Specification 5.5.16.c.(i), shall be within the specified Frequency of six years, plus the 18-month allowance of SR 3.0.2, as measured from June 26, 2007, the date of the most recent successful tracer gas test, as stated in the August 16, 2007, letter response to Generic Letter 2003–01.

(b) The first performance of the periodic assessment of CRE habitability, Specification 5.5.16.c.(ii), shall be within three years, plus the nine-month allowance of SR 3.0.2, as measured from June 26, 2007, the date of the most recent

successful tracer gas test, as stated in the August 16, 2007, letter response to Generic Letter 2003–01.

(c) The first performance of the periodic measurement of CRE pressure, Specification 5.5.16.d, shall be within 18 months, plus the 138 days allowed by SR 3.0.2, as measured from July 16, 2007, the date of the most recent successful pressure measurement test.

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration Determination

ENO has reviewed the proposed NSHCD published in the Federal Register as part of the CLIIP. ENO has concluded that the proposed NSHCD presented in the Federal Register notice is applicable to PNP and is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

4.0 ENVIRONMENTAL EVALUATION

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

ENCLOSURE 2

LICENSE AMENDMENT REQUEST: CONTROL ROOM HABITABILITY

MARK-UP OF TECHNICAL SPECIFICATION
PAGES 3.7.10.1 - 3.7.10-4, 5.0-14 - 5.0-23

(showing proposed changes)

(additions are highlighted; deletions are strikethrough)

14 Pages Follow

3.7 PLANT SYSTEMS

3.7.10 Control Room Ventilation (CRV) Filtration

LCO 3.7.10 Two CRV Filtration trains shall be OPERABLE.

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

APPLICABILITY: MODES 1, 2, 3, 4,
During CORE ALTERATIONS,
During movement of irradiated fuel assemblies,
During movement of a fuel cask in or over the Spent Fuel Pool (SFP).

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One CRV Filtration train inoperable for reasons other than Condition B.	A.1	Restore CRV Filtration train to OPERABLE status.	7 days
B. ~~Two~~One or more CRV Filtration trains inoperable due to inoperable CRE ~~control room~~ boundary in MODE 1, 2, 3, or 4.	B.1	Initiate ~~preplanned compensatory measures~~ action to implement mitigating actions.	Immediately
	AND		
	B.2	Verify mitigating actions ensure CRE occupant radiological exposures will not exceed limits, and CRE occupants are protected from chemical and smoke hazards.	24 hours
	AND		
	B.3~~2~~	Restore CRE ~~control room~~ boundary to OPERABLE status.	90 days~~24 hours~~

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
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. AND C.2 Be in MODE 5.	6 hours 36 hours
D. Required Action and associated Completion Time of Condition A not met during CORE ALTERATIONS, during movement of irradiated fuel assemblies, or during movement of a fuel cask in or over the SFP.	D.1 Place OPERABLE CRV Filtration train in emergency mode. OR D.2.1 Suspend CORE ALTERATIONS. AND D.2.2 Suspend movement of irradiated fuel assemblies. AND D.2.3 Suspend movement of a fuel cask in or over the SFP.	Immediately Immediately Immediately Immediately

CONDITION	REQUIRED ACTION		COMPLETION TIME
E. Two CRV Filtration trains inoperable during CORE ALTERATIONS, during movement of irradiated fuel assemblies, or during movement of a fuel cask in or over the SFP. OR One or more CRV Filtration trains inoperable due to an inoperable CRE boundary during CORE ALTERATIONS, during movement of irradiated fuel assemblies, or during movement of a fuel cask in or over the SFP.	E.1	Suspend CORE ALTERATIONS. AND	Immediately
	E.2	Suspend movement of irradiated fuel assemblies. AND	Immediately
	E.3	Suspend movement of a fuel cask in or over the SFP.	Immediately
F. Two CRV Filtration 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 3.7.10.1	Operate each CRV Filtration train for ≥ 10 continuous hours with associated heater (VHX-26A or VHX-26B) operating.	31 days
SR 3.7.10.2	Perform required CRV Filtration filter testing in accordance with the Ventilation Filter Testing Program.	In accordance with the Ventilation Filter Testing Program
SR 3.7.10.3	----------NOTE---------- Only required to be met in MODES 1, 2, 3, and 4, and during movement of irradiated fuel assemblies in containment. ---------- Verify each CRV Filtration train actuates on an actual or simulated actuation signal.	18 months
SR 3.7.10.4	Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program~~Verify one CRV Filtration train can maintain a positive pressure of ≥ 0.125 inches water gauge, relative to the adjacent area during the emergency mode of operation, at an emergency ventilation flow rate of ≥ 3040 cfm and ≤ 3520 cfm~~.	In accordance with the Control Room Envelope Habitability Program~~18 months~~

5.5 Programs and Manuals

5.5.9 Secondary Water Chemistry Program

A program shall be established, implemented and maintained for monitoring of secondary water chemistry to inhibit steam generator tube degradation and shall include:

a. Identification of a sampling schedule for the critical variables and control points for these variables,

b. Identification of the procedures used to measure the values of the critical variables,

c. Identification of process sampling points, which shall include monitoring the discharge of the condensate pumps for evidence of condenser in-leakage,

d. Procedures for the recording and management of data,

e. Procedures defining corrective actions for all off-control point chemistry conditions, and

f. A procedure identifying (a) the authority responsible for the interpretation of the data, and (b) the sequence and timing of administrative events required to initiate corrective actions.

5.5.10 Ventilation Filter Testing Program

A program shall be established to implement the following required testing of Control Room Ventilation (CRV) and Fuel Handling Area Ventilation systems at the frequencies specified in Regulatory Guide 1.52, Revision 2 (RG 1.52), and in accordance with RG 1.52 and ASME N510-1989, at the system flowrates and tolerances specified below*:

a. Demonstrate for each of the ventilation systems that an inplace test of the High Efficiency Particulate Air (HEPA) filters shows a penetration and system bypass < 0.05% for the CRV and < 1.00% for the Fuel Handling Area Ventilation System when tested in accordance with RG 1.52 and ASME N510-1989:

Ventilation System	Flowrate (CFM)
V-8A or V-8B	7300 ± 20%
V-8A and V-8B	10,000 ± 20%
V-95 or V-96	12,500 ± 10%

5.5 Programs and Manuals

5.5.10 Ventilation Filter Testing Program (continued)

b. Demonstrate for each of the ventilation systems that an inplace test of the charcoal adsorber shows a penetration and system bypass < 0.05% for the CRV and < 1.00% for the Fuel Handling Area Ventilation System when tested in accordance with RG 1.52 and ASME N510-1989.

Ventilation System	Flowrate (CFM)
V-8A and V-8B	10,000 ± 20%
V-26A and V-26B	3200 +10% -5%

c. Demonstrate for each of the ventilation systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in RG 1.52 shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1989 at a temperature of ≤ 30°C and equal to the relative humidity specified as follows:

Ventilation System	Penetration	Relative Humidity
VF-66	6.00%	95%
VFC-26A and VFC-26B	0.157%	70%

d. For each of the ventilation systems, demonstrate the pressure drop across the combined HEPA filters, the prefilters, and the charcoal adsorbers is less than the value specified below when tested in accordance with RG 1.52 and ASME N510-1989:

Ventilation System	Delta P (In H_20)	Flowrate (CFM)
V-8A and V-8B	6.0	10,000 ± 20%
VF-26A and VF-26B	8.0	3200 +10% -5%

e. Demonstrate that the heaters for the CRV system dissipates the following specified value ± 20% when tested in accordance with ASME N510-1989:

Ventilation System	Wattage
VHX-26A and VHX-26B	15 kW

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Ventilation Filter Testing Program frequencies.

* Should the 720-hour limitation on charcoal adsorber operation occur during a plant operation requiring the use of the charcoal adsorber - such as refueling - testing may be delayed until the completion of the plant operation or up to 1,500 hours of filter operation; whichever occurs first.

5.5 Programs and Manuals

5.5.11 Fuel Oil Testing Program

A fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling requirements, testing requirements, and acceptance criteria, based on the diesel manufacturer's specifications and applicable ASTM Standards. The program shall establish the following:

a. Acceptability of new fuel oil prior to addition to the Fuel Oil Storage Tank, and acceptability of fuel oil stored in the Fuel Oil Storage Tank, by determining that the fuel oil has the following properties within limits:

1. API gravity or an absolute specific gravity,

2. Kinematic viscosity, and

3. Water and sediment content.

b. Other properties of fuel oil stored in the Fuel Oil Storage Tank, specified by the diesel manufacturers or specified for grade 2D fuel oil in ASTM D 975, are within limits.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Fuel Oil Testing Program.

5.5.12 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.

b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:

1. A change in the TS incorporated in the license; or

2. A change to the updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

5.5 Programs and Manuals

5.5.12 Technical Specifications (TS) Bases Control Program (continued)

c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.

d. Proposed changes that meet the criteria of Specification 5.5.12.b. above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

5.5.13 Safety Functions Determination Program (SFDP)

This program ensures loss of safety function is detected and appropriate actions taken. Upon entry into LCO 3.0.6, an evaluation shall be made to determine if loss of safety function exists. Additionally, other appropriate limitations and remedial or compensatory actions may be identified to be taken as a result of the support system inoperability and corresponding exception to entering supported system Condition and Required Actions. This program implements the requirements of LCO 3.0.6. The SFDP shall contain the following:

a. Provisions for cross train checks to ensure a loss of the capability to perform the safety function assumed in the accident analysis does not go undetected;

b. Provisions for ensuring the plant is maintained in a safe condition if a loss of function condition exists;

c. Provisions to ensure that an inoperable supported system's Completion Time is not inappropriately extended as a result of multiple support system inoperabilities; and

d. Other appropriate limitations and remedial or compensatory actions.

A loss of safety function exists when, assuming no concurrent single failure, a safety function assumed in the accident analysis cannot be performed. For the purpose of this program, a loss of safety function may exist when a support system is inoperable, and:

a. A required system redundant to system(s) supported by the inoperable support system is also inoperable; or

b. A required system redundant to system(s) in turn supported by the inoperable supported system is also inoperable; or

5.5 Programs and Manuals

5.5.13 Safety Functions Determination Program (SFDP) (continued)

c. A required system redundant to support system(s) for the supported systems (a) and (b) above is also inoperable.

The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

5.5.14 Containment Leak Rate Testing Program

a. A program shall establish the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines of Regulatory Guide 1.163, "Performance-Based Containment Leakage-Test Program," dated September 1995, as modified by the following exceptions:

1. Leakage rate testing is not necessary after opening the Emergency Escape Air Lock doors for post-test restoration or post-test adjustment of the air lock door seals. However, a seal contact check shall be performed instead.

   Emergency Escape Airlock door opening, solely for the purpose of strongback removal and performance of the seal contact check, does not necessitate additional pressure testing.

2. Leakage rate testing at P_a is not necessary after adjustment of the Personnel Air Lock door seals. However, a between-the-seals test shall be performed at ≥10 psig instead.

3. Leakage rate testing frequency for the Containment 4 inch purge exhaust valves, the 8 inch purge exhaust valves, and the 12 inch air room supply valves may be extended up to 60 months based on component performance.

b. The calculated peak containment internal pressure for the design basis loss of coolant accident, P_a, is 53 psig. The containment design pressure is 55 psig.

c. The maximum allowable containment leakage rate, L_a, at P_a, shall be 0.1% of containment air weight per day.

5.5 Programs and Manuals

5.5.14 Containment Leak Rate Testing Program (continued)

d. Leakage rate acceptance criteria are:

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

2. Air lock testing acceptance criteria are:

a) Overall air lock leakage is $\leq 1.0\ L_a$ when tested at $\geq P_a$ and combined with all penetrations and valves subjected to Type B and C tests. However, during the first unit startup following testing performed in accordance with this program, the leakage rate acceptance criteria is $< 0.6\ L_a$ when combined with all penetrations and valves subjected to Type B and C tests.

b) For each Personnel Air Lock door, leakage is $\leq 0.023\ L_a$ when pressurized to ≥ 10 psig.

c) For each Emergency Escape Air Lock door, a seal contact check , consisting of a verification of continuous contact between the seals and the sealing surfaces, is acceptable.

e. "Containment OPERABILITY" is equivalent to "Containment Integrity" for the purposes of the testing requirements.

f. The provisions of SR 3.0.3 are applicable to the Containment Leak Rate Testing Program requirements.

g. Nothing in these Technical Specifications shall be construed to modify the testing Frequencies required by 10 CFR 50, Appendix J.

5.5 Programs and Manuals

5.5.15 Process Control Program

a. The Process Control Program shall contain the current formula, sampling, analyses, tests, and determinations to be made to ensure that the processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR 20, 10 CFR 71, Federal and State regulations, and other requirements governing the disposal of the radioactive waste.

b. Changes to the Process Control Program:

1. Shall be documented and records of reviews performed shall be retained as required by the Quality Program, CPC-2A. This documentation shall contain:

a) Sufficient information to support the change together with the appropriate analyses or evaluation justifying the change(s) and

b) A determination that the change will maintain the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations.

2. Shall become effective after approval by the plant superintendent.

5.5.16 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 Ventilation (CRV) Filtration, CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of 5 rem whole body or its equivalent to any part of the body for the duration of the accident. The program shall include the following elements:

a. The definition of the CRE and the 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.

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 CRV Filtration, operating at the flow rate required by the Ventilation Filter Testing Program, at a Frequency of 18 months on a STAGGERED TEST BASIS. The results shall be trended and used as part of the 18 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.

5.5 Programs and Manuals

This page retained for page numbering

5.5 Programs and Manuals

This page retained for page numbering

ENCLOSURE 3

LICENSE AMENDMENT REQUEST: CONTROL ROOM HABITABILITY

REVISED TECHNICAL SPECIFICATION
PAGES 3.7.10.1 - 3.7.10-4, 5.0-14 - 5.0-23

14 Pages Follow

3.7 PLANT SYSTEMS

3.7.10 Control Room Ventilation (CRV) Filtration

LCO 3.7.10 Two CRV Filtration trains shall be OPERABLE.

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

APPLICABILITY: MODES 1, 2, 3, 4,
During CORE ALTERATIONS,
During movement of irradiated fuel assemblies,
During movement of a fuel cask in or over the Spent Fuel Pool (SFP).

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One CRV Filtration train inoperable for reasons other than Condition B.	A.1	Restore CRV Filtration train to OPERABLE status.	7 days
B. One or more CRV Filtration trains inoperable due to inoperable CRE boundary in MODE 1, 2, 3, or 4.	B.1	Initiate action to implement mitigating actions.	Immediately
	AND		
	B.2	Verify mitigating actions ensure CRE occupant radiological exposures will not exceed limits, and CRE occupants are protected from chemical and smoke hazards.	24 hours
	AND		
	B.3	Restore CRE boundary to OPERABLE status.	90 days

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
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. AND C.2 Be in MODE 5.	6 hours 36 hours
D. Required Action and associated Completion Time of Condition A not met during CORE ALTERATIONS, during movement of irradiated fuel assemblies, or during movement of a fuel cask in or over the SFP.	D.1 Place OPERABLE CRV Filtration train in emergency mode. OR D.2.1 Suspend CORE ALTERATIONS. AND D.2.2 Suspend movement of irradiated fuel assemblies. AND D.2.3 Suspend movement of a fuel cask in or over the SFP.	Immediately Immediately Immediately Immediately

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two CRV Filtration trains inoperable during CORE ALTERATIONS, during movement of irradiated fuel assemblies, or during movement of a fuel cask in or over the SFP. OR One or more CRV Filtration trains inoperable due to an inoperable CRE boundary during CORE ALTERATIONS, during movement of irradiated fuel assemblies, or during movement of a fuel cask in or over the SFP.	E.1 Suspend CORE ALTERATIONS. AND E.2 Suspend movement of irradiated fuel assemblies. AND E.3 Suspend movement of a fuel cask in or over the SFP.	Immediately Immediately Immediately
F. Two CRV Filtration 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 3.7.10.1	Operate each CRV Filtration train for ≥ 10 continuous hours with associated heater (VHX-26A or VHX-26B) operating.	31 days
SR 3.7.10.2	Perform required CRV Filtration filter testing in accordance with the Ventilation Filter Testing Program.	In accordance with the Ventilation Filter Testing Program
SR 3.7.10.3	----------NOTE---------- Only required to be met in MODES 1, 2, 3, and 4, and during movement of irradiated fuel assemblies in containment. ---------- Verify each CRV Filtration train actuates on an actual or simulated actuation signal.	18 months
SR 3.7.10.4	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

5.5.9 Secondary Water Chemistry Program

A program shall be established, implemented and maintained for monitoring of secondary water chemistry to inhibit steam generator tube degradation and shall include:

a. Identification of a sampling schedule for the critical variables and control points for these variables,

b. Identification of the procedures used to measure the values of the critical variables,

c. Identification of process sampling points, which shall include monitoring the discharge of the condensate pumps for evidence of condenser in-leakage,

d. Procedures for the recording and management of data,

e. Procedures defining corrective actions for all off-control point chemistry conditions, and

f. A procedure identifying (a) the authority responsible for the interpretation of the data, and (b) the sequence and timing of administrative events required to initiate corrective actions.

5.5.10 Ventilation Filter Testing Program

A program shall be established to implement the following required testing of Control Room Ventilation (CRV) and Fuel Handling Area Ventilation systems at the frequencies specified in Regulatory Guide 1.52, Revision 2 (RG 1.52), and in accordance with RG 1.52 and ASME N510-1989, at the system flowrates and tolerances specified below*:

a. Demonstrate for each of the ventilation systems that an inplace test of the High Efficiency Particulate Air (HEPA) filters shows a penetration and system bypass < 0.05% for the CRV and < 1.00% for the Fuel Handling Area Ventilation System when tested in accordance with RG 1.52 and ASME N510-1989:

Ventilation System	Flowrate (CFM)
V-8A or V-8B	7300 ± 20%
V-8A and V-8B	10,000 ± 20%
V-95 or V-96	12,500 ± 10%

5.5 Programs and Manuals

5.5.10 Ventilation Filter Testing Program (continued)

b. Demonstrate for each of the ventilation systems that an inplace test of the charcoal adsorber shows a penetration and system bypass < 0.05% for the CRV and < 1.00% for the Fuel Handling Area Ventilation System when tested in accordance with RG 1.52 and ASME N510-1989.

Ventilation System	Flowrate (CFM)
V-8A and V-8B	10,000 ± 20%
V-26A and V-26B	3200 +10% -5%

c. Demonstrate for each of the ventilation systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in RG 1.52 shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1989 at a temperature of ≤ 30°C and equal to the relative humidity specified as follows:

Ventilation System	Penetration	Relative Humidity
VF-66	6.00%	95%
VFC-26A and VFC-26B	0.157%	70%

d. For each of the ventilation systems, demonstrate the pressure drop across the combined HEPA filters, the prefilters, and the charcoal adsorbers is less than the value specified below when tested in accordance with RG 1.52 and ASME N510-1989:

Ventilation System	Delta P (In H_20)	Flowrate (CFM)
V-8A and V-8B	6.0	10,000 ± 20%
VF-26A and VF-26B	8.0	3200 +10% -5%

e. Demonstrate that the heaters for the CRV system dissipates the following specified value ± 20% when tested in accordance with ASME N510-1989:

Ventilation System	Wattage
VHX-26A and VHX-26B	15 kW

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Ventilation Filter Testing Program frequencies.

* Should the 720-hour limitation on charcoal adsorber operation occur during a plant operation requiring the use of the charcoal adsorber - such as refueling - testing may be delayed until the completion of the plant operation or up to 1,500 hours of filter operation; whichever occurs first.

5.5 Programs and Manuals

5.5.11 Fuel Oil Testing Program

A fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling requirements, testing requirements, and acceptance criteria, based on the diesel manufacturer's specifications and applicable ASTM Standards. The program shall establish the following:

a. Acceptability of new fuel oil prior to addition to the Fuel Oil Storage Tank, and acceptability of fuel oil stored in the Fuel Oil Storage Tank, by determining that the fuel oil has the following properties within limits:

1. API gravity or an absolute specific gravity,

2. Kinematic viscosity, and

3. Water and sediment content.

b. Other properties of fuel oil stored in the Fuel Oil Storage Tank, specified by the diesel manufacturers or specified for grade 2D fuel oil in ASTM D 975, are within limits.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Fuel Oil Testing Program.

5.5.12 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.

b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:

1. A change in the TS incorporated in the license; or

2. A change to the updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

5.5 Programs and Manuals

5.5.12 Technical Specifications (TS) Bases Control Program (continued)

c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.

d. Proposed changes that meet the criteria of Specification 5.5.12.b. above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

5.5.13 Safety Functions Determination Program (SFDP)

This program ensures loss of safety function is detected and appropriate actions taken. Upon entry into LCO 3.0.6, an evaluation shall be made to determine if loss of safety function exists. Additionally, other appropriate limitations and remedial or compensatory actions may be identified to be taken as a result of the support system inoperability and corresponding exception to entering supported system Condition and Required Actions. This program implements the requirements of LCO 3.0.6. The SFDP shall contain the following:

a. Provisions for cross train checks to ensure a loss of the capability to perform the safety function assumed in the accident analysis does not go undetected;

b. Provisions for ensuring the plant is maintained in a safe condition if a loss of function condition exists;

c. Provisions to ensure that an inoperable supported system's Completion Time is not inappropriately extended as a result of multiple support system inoperabilities; and

d. Other appropriate limitations and remedial or compensatory actions.

A loss of safety function exists when, assuming no concurrent single failure, a safety function assumed in the accident analysis cannot be performed. For the purpose of this program, a loss of safety function may exist when a support system is inoperable, and:

a. A required system redundant to system(s) supported by the inoperable support system is also inoperable; or

b. A required system redundant to system(s) in turn supported by the inoperable supported system is also inoperable; or

5.5 Programs and Manuals

5.5.13 Safety Functions Determination Program (SFDP) (continued)

c. A required system redundant to support system(s) for the supported systems (a) and (b) above is also inoperable.

The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

5.5.14 Containment Leak Rate Testing Program

a. A program shall establish the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines of Regulatory Guide 1.163, "Performance-Based Containment Leakage-Test Program," dated September 1995, as modified by the following exceptions:

1. Leakage rate testing is not necessary after opening the Emergency Escape Air Lock doors for post-test restoration or post-test adjustment of the air lock door seals. However, a seal contact check shall be performed instead.

   Emergency Escape Airlock door opening, solely for the purpose of strongback removal and performance of the seal contact check, does not necessitate additional pressure testing.

2. Leakage rate testing at P_a is not necessary after adjustment of the Personnel Air Lock door seals. However, a between-the-seals test shall be performed at ≥10 psig instead.

3. Leakage rate testing frequency for the Containment 4 inch purge exhaust valves, the 8 inch purge exhaust valves, and the 12 inch air room supply valves may be extended up to 60 months based on component performance.

b. The calculated peak containment internal pressure for the design basis loss of coolant accident, P_a, is 53 psig. The containment design pressure is 55 psig.

c. The maximum allowable containment leakage rate, L_a, at P_a, shall be 0.1% of containment air weight per day.

5.5 Programs and Manuals

5.5.14 Containment Leak Rate Testing Program (continued)

d. Leakage rate acceptance criteria are:

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

2. Air lock testing acceptance criteria are:

a) Overall air lock leakage is $\leq 1.0\ L_a$ when tested at $\geq P_a$ and combined with all penetrations and valves subjected to Type B and C tests. However, during the first unit startup following testing performed in accordance with this program, the leakage rate acceptance criteria is $< 0.6\ L_a$ when combined with all penetrations and valves subjected to Type B and C tests.

b) For each Personnel Air Lock door, leakage is $\leq 0.023\ L_a$ when pressurized to ≥ 10 psig.

c) For each Emergency Escape Air Lock door, a seal contact check , consisting of a verification of continuous contact between the seals and the sealing surfaces, is acceptable.

e. "Containment OPERABILITY" is equivalent to "Containment Integrity" for the purposes of the testing requirements.

f. The provisions of SR 3.0.3 are applicable to the Containment Leak Rate Testing Program requirements.

g. Nothing in these Technical Specifications shall be construed to modify the testing Frequencies required by 10 CFR 50, Appendix J.

5.5 Programs and Manuals

5.5.15 Process Control Program

a. The Process Control Program shall contain the current formula, sampling, analyses, tests, and determinations to be made to ensure that the processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR 20, 10 CFR 71, Federal and State regulations, and other requirements governing the disposal of the radioactive waste.

b. Changes to the Process Control Program:

1. Shall be documented and records of reviews performed shall be retained as required by the Quality Program, CPC-2A. This documentation shall contain:

a) Sufficient information to support the change together with the appropriate analyses or evaluation justifying the change(s) and

b) A determination that the change will maintain the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations.

2. Shall become effective after approval by the plant superintendent.

5.5 Programs and Manuals

5.5.16 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 Ventilation (CRV) Filtration, CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of 5 rem whole body or its equivalent to any part of the body for the duration of the accident. The program shall include the following elements:

a. The definition of the CRE and the 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.

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 CRV Filtration, operating at the flow rate required by the Ventilation Filter Testing Program, at a Frequency of 18 months on a STAGGERED TEST BASIS. The results shall be trended and used as part of the 18 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.

5.5 Programs and Manuals

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5.5 Programs and Manuals

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ENCLOSURE 4

LICENSE AMENDMENT REQUEST: CONTROL ROOM HABITABILITY

MARK-UP OF TECHNICAL SPECIFICATION BASES
PAGES 3.7.10-1 - 3.7.10-9

(showing proposed changes)

(additions are highlighted; deletions are strikethrough)

(proposed changes are provided for information only)

9 Pages Follow

B 3.7 PLANT SYSTEMS

B 3.7.10 Control Room Ventilation (CRV) Filtration

BASES

BACKGROUND

The CRV Filtration provides a protected environment from which ~~operators~~ occupants can control the plant following an uncontrolled release of radioactivity.

The CRV Filtration consists of a common emergency intake which splits into two independent, redundant trains that recirculate and filter the air in the control room envelope (CRE) ~~air~~ and a CRE boundary that limits the inleakage of unfiltered air. The exhaust of each train exhausts into a common supply plenum. Each train consists of a prefilter, a heater, a High Efficiency Particulate Air (HEPA) filter, two banks of activated charcoal adsorbers for removal of gaseous activity (principally iodines), a second HEPA filter, and a fan. Ductwork, valves or dampers, doors, barriers, and instrumentation also form part of the system. A second bank of HEPA filters follows the adsorber section to collect carbon fines, and provides ~~to~~ back up in case of failure of the main HEPA filter bank ~~if it fails~~.

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

The CRV Filtration is an emergency system, part of which may also operate during normal plant operations in the standby mode of operation. Upon manual initiation or receipt of a containment high pressure or containment high radiation signal, normal air supply to the CRE ~~control room~~ is isolated, and the stream of ventilation air is recirculated through the filter trains of the system. The prefilters remove any large particles in the air. Continuous operation of each train for at least 10 hours per month, with the heaters on, reduces moisture buildup on the HEPA filters and adsorbers. The heater is important to the effectiveness of the charcoal adsorbers.

BASES

BACKGROUND (continued)

Actuation of the system to the emergency mode of operation closes the normal unfiltered outside air intake and unfiltered exhaust dampers, opens the emergency air intake, and aligns the system for recirculation of the air within the CRE~~control room air~~ through the redundant trains of HEPA and charcoal filters. The emergency mode also initiates pressurization and filtered ventilation of the air supply to the CRE~~control room~~.

Outside air is filtered, and then added to the air being recirculated from the CRE ~~control room~~. Pressurization of the CRE~~control room prevents~~ minimizes infiltration of unfiltered air through the CRE boundary from all the surrounding areas adjacent to the CRE boundary~~of the building~~.

A single train will pressurize the CRE ~~control room~~ to at least 0.125 inches water gauge relative to external areas adjacent to the CRE boundary~~the south hallway outside the Control Room Viewing Galley~~, and provides an air exchange rate in excess of 25% per hour. The CRV Filtration operation in maintaining the CRE ~~control room~~ habitable is discussed in the FSAR, Section 9.8 (Ref. 1).

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

The CRV Filtration is designed to maintain a habitable environment in the CRE ~~the control room environment~~ for 30 days of continuous occupancy after a Design Basis Accident (DBA) without exceeding a 5 rem whole body dose or its equivalent to any part of the body.

APPLICABLE SAFETY ANALYSES

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

The CRV Filtration provides airborne radiological protection for the CRE occupants~~control room operators~~, as demonstrated by the CRE occupant~~control room accident~~ dose analyses for the most limiting design basis events discussed in the FSAR, Chapter 14 (Ref. 2).

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

BASES

APPLICABLE SAFETY ANALYSES (continued)

panels. No CRV Filtration actuation is required for hazardous chemical releases or smoke.

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

The CRV Filtration satisfies Criterion 3 of 10 CFR 50.36(c)(2).

LCO

Two independent and redundant trains of the CRV Filtration are required to be OPERABLE to ensure that at least one is available~~, assuming~~ if ~~that~~ 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 whole body or its equivalent to any part of the body~~5 rem~~ in the event of a large radioactive release.

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

a. Main recirculation fan and emergency filter fan are OPERABLE;

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

c. Required heater, ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

In order for the CRV Filtration trains to be considered OPERABLE, the CRE boundary must be maintained such that the CRE occupant dose from a large radioactive release does not exceed the calculated dose in the licensing basis consequence 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 such that 0.125 inches water gauge positive pressure can be maintained in the emergency mode.~~

This LCO is modified by a Note allowing the CRE ~~control room~~ boundary to be opened intermittently under administrative control. 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. Since this Note modifies the LCO, no Condition entry is required when the control room boundary is opened under its provisions. For entry and exit through doors, the

BASES

LCO (continued)

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~~control room~~. 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 ~~control room~~ isolation is indicated.

APPLICABILITY

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

In MODES 5 and 6, the probability and consequences of a Design Basis Accident are reduced due to the pressure and temperature limitations in these MODES. Therefore, maintaining CRV Filtration OPERABLE is not required in MODE 5 or 6, except for the following situations under which significant radioactive releases can be postulated:

a. During CORE ALTERATIONS;

b. During movement of irradiated fuel assemblies; and

c. During movement of a fuel cask in or over the SFP.

ACTIONS

A.1

With one CRV Filtration train inoperable, for reasons other than an inoperable CRE boundary, action must be taken to restore OPERABLE status within 7 days. In this Condition, the remaining OPERABLE CRV Filtration ~~subsystem~~ train is adequate to perform the CRE occupant ~~control room radiation~~ protection function. However, the overall reliability is reduced because a single failure in the OPERABLE CRV Filtration train could result in loss of CRV Filtration function. The 7 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.~~2~~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), the CRE boundary is inoperable. Actions must be taken to restore an OPERABLE CRE boundary within 90 days.

BASES

ACTIONS (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 event. 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.

~~If the control room boundary is inoperable in MODE 1, 2, 3, or 4, the CRV Filtration trains cannot perform their 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 General Design Criterion 19) shall be utilized to protect control room operators from potential hazards such as radioactive contamination, toxic chemicals, or smoke, and to ensure control room physical security. Preplanned measures shall 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 an analyzed event requiring control room isolation occurring during this time period, and the use of compensatory measures. The 24 hour Completion Time is a reasonable time to diagnose and repair most problems occurring with the control room boundary.~~

C.1 and C.2

In MODE 1, 2, 3, or 4, if ~~If~~ the inoperable CRV Filtration train or the CRE ~~control room~~ boundary cannot be restored to OPERABLE status within the required Completion Time of Condition A or B ~~in MODE 1, 2, 3, or 4~~, the plant must be placed in a MODE that minimizes the accident risk. To achieve this status, the plant must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times

BASES

ACTIONS (continued)

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

D.1, D.2.1, D.2.2, and D.2.3

During CORE ALTERATIONS, during movement of irradiated fuel assemblies, during movement of a fuel cask in or over the SFP, if Required Action A.1 cannot be completed within the required Completion Time, the OPERABLE CRV Filtration 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 CRE~~control room~~. This places the plant in a condition that minimizes the accident risk. This does not preclude the movement of fuel assemblies or a fuel cask to a safe position.

E.1, E.2, and E.3

During CORE ALTERATIONS, during movement of irradiated fuel assemblies, or during movement of a fuel cask in or over the SFP, with two CRV Filtration trains inoperable or with one or more CRV Filtration 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 CRE~~control room~~. This places the plant in a condition that minimizes the accident risk. This does not preclude the movement of fuel assemblies or a fuel cask to a safe position.

F.1

If both CRV Filtration trains are inoperable in MODE 1, 2, 3, or 4 for reasons other than an inoperable CRE~~control room~~ boundary (i.e., Condition B), the CRV Filtration may not be capable of performing the intended function and the plant is in a condition outside the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.10.1

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.

Monthly heater operations dry out any moisture accumulated in the charcoal from humidity in the ambient air. Each train must be operated for ≥ 10 continuous hours with the associated heater, VHX-26A or VHX-26B, energized. The 31 day Frequency is based on the known reliability of the equipment, and the two train redundancy available.

SR 3.7.10.2

This SR verifies that the required CRV Filtration testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The CRV Filtration filter tests are in accordance with ~~Regulatory Guide 1.52 (Ref. 3) as described in~~ the 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 Ffrequencies and additional information are discussed in detail in the VFTP.

SR 3.7.10.3

This SR verifies that each CRV Filtration train starts and operates on an actual or simulated actuation signal. Specific signals (e.g., containment high pressure, containment high radiation) are tested under Section 3.3, "Instrumentation." This SR is modified by a Note which states this SR is only required to be met in MODES 1, 2, 3 and 4 and during movement of irradiated fuel assemblies in containment. The instrumentation providing the input signal is not required in other~~these~~ plant conditions, therefore, to keep consistency with Section 3.3, "Instrumentation," the SR is not required to be met. The Frequency of 18 months is based on industry operating experience and is consistent with the typical refueling cycle.~~The Frequency of 18 months is consistent with that specified in Reference 3.~~

BASES

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.7.10.4

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

The CRE is considered habitable when the radiological dose to 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 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. 3) which endorses, with exceptions, NEI 99-03, Section 8.4 and Appendix F (Ref. 4). 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. 5). 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 CRV Filtration. During the emergency mode of operation, the CRV Filtration is designed to pressurize the control room ≥ 0.125 inches water gauge positive pressure with respect to adjacent areas in order to prevent unfiltered inleakage. The CRV Filtration is designed to maintain this positive pressure with one train at an emergency ventilation flow rate of ≥ 3040 cfm and ≤ 3520 cfm. The Frequency of 18 months is consistent with the guidance provided in NUREG-0800, Section 6.4 (Ref. 4).~~

BASES

REFERENCES

1. FSAR, Section 9.8

2. FSAR, Chapter 14

3. Regulatory Guide 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors".~~52 (Rev. 2)~~

~~4. NUREG-0800, Section 6.4, Rev. 2, July 1981~~

4. NEI 99-03, "Control Room Habitability Assessment," June 2001.

5. 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).