



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

January 27, 2009

Mr. Adam C. Heflin
Senior Vice President and
Chief Nuclear Officer
Union Electric Company
P.O. Box 620
Fulton, MO 65251

SUBJECT: CALLAWAY PLANT, UNIT 1 - ISSUANCE OF AMENDMENT RE:
APPLICATION TO REVISE TECHNICAL SPECIFICATIONS REGARDING
CONTROL ROOM ENVELOPE HABITABILITY IN ACCORDANCE WITH
TSTF-448, REVISION 3 (TAC NO. MD8006)

Dear Mr. Heflin:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 190 to Facility Operating License No. NPF-30 for the Callaway Plant, Unit 1. This amendment consists of changes to the Technical Specifications (TSs), in response to your application dated January 14, 2008, as supplemented by letters dated November 26 and December 17, 2008.

The amendment adds a new license condition on the control room envelope (CRE) habitability program, revises the TS requirements related to the CRE habitability in TS 3.7.10, "Control Room Emergency Ventilation System (CREVS)," and establishes a CRE habitability program in TS Section 5.5, "Administrative Controls – Programs and Manuals." These changes are consistent with the NRC-approved Industry/TS Task Force (TSTF) Traveler TSTF-448, Revision 3, "Control Room Habitability." The availability of this TS improvement was published in the *Federal Register* on January 17, 2007 (72 FR 2022), as part of the Consolidated Line Item Improvement Process.

A copy of the related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

A handwritten signature in cursive script that reads "Mohan C. Thadani".

Mohan C. Thadani, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosures:

1. Amendment No. 190 to NPF-30
2. Safety Evaluation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 190
License No. NPF-30

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Union Electric Company (UE, the licensee), dated January 14, 2008, as supplemented by letters dated November 26 and December 17, 2008, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraphs 2.C.(2) and 2.C.(16) of Facility Operating License No. NPF-30 are hereby amended to read as follows:

- (2) Technical Specifications and Environmental Protection Plan*

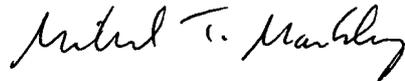
The Technical Specifications contained in Appendix A, as revised through Amendment No. 190 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

- (16) Additional Conditions

The Additional Conditions contained in Appendix C, as revised through Amendment No. 190, are hereby incorporated into this license. UE shall operate the facility in accordance with the Additional Conditions.

3. This amendment is effective as of its date of issuance, and shall be implemented within 120 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Michael T. Markley, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Facility Operating
License No. NPF-30 and
Technical Specifications

Date of Issuance: January 27, 2009

ATTACHMENT TO LICENSE AMENDMENT NO. 190

FACILITY OPERATING LICENSE NO. NPF-30

DOCKET NO. 50-483

Replace the following pages of the Facility Operating License No. NPF-30, Appendix A - Technical Specifications, and Appendix C - Additional Conditions, with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Facility Operating License

REMOVE

-3-

-5-

INSERT

-3-

-5-

Appendix A - Technical Specifications

REMOVE

3 (table of contents)

4 (table of contents)

3.7-26 to 3.7-41

5.0-20 to 5.0-28

INSERT

3 (table of contents)

4 (table of contents)

3.7-26 to 3.7-43

5.0-20 to 5.0-30

Appendix C - Additional Conditions

INSERT

-2-

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REMOVE

-2-

-3-

- (4) UE, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source of special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
 - (5) UE, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
- (1) Maximum Power Level

UE is authorized to operate the facility at reactor core power levels not in excess of 3565 megawatts thermal (100% power) in accordance with the conditions specified herein.
 - (2) Technical Specifications and Environmental Protection Plan*

The Technical Specifications contained in Appendix A, as revised through Amendment No. 190 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.
 - (3) Environmental Qualification (Section 3.11, SSER #3)**

Deleted per Amendment No. 169

* Amendments 133, 134, & 135 were effective as of April 30, 2000 however these amendments were implemented on April 1, 2000.

** The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report and/or its supplements wherein the license condition is discussed.

(11) Steam Generator Tube Rupture (Section 15.4.4, SSER #3)

Deleted per Amendment No. 169.

(12) Low Temperature Overpressure Protection (Section 15, SSER #3)

Deleted per Amendment No. 169.

(13) LOCA Reanalysis (Section 15, SSER #3)

Deleted per Amendment No. 169.

(14) Generic Letter 83-28

Deleted per Amendment No. 169.

(15) Mitigation Strategy License Condition

Develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

(a) Fire fighting response strategy with the following elements:

1. Pre-defined coordinated fire response strategy and guidance
2. Assessment of mutual aid fire fighting assets
3. Designated staging areas for equipment and materials
4. Command and control
5. Training of response personnel

(b) Operations to mitigate fuel damage considering the following:

1. Protection and use of personnel assets
2. Communications
3. Minimizing fire spread
4. Procedures for implementing integrated fire response strategy
5. Identification of readily-available, pre-staged equipment
6. Training on integrated fire response strategy
7. Spent fuel pool mitigation measures

(c) Actions to minimize release to include consideration of:

1. Water spray scrubbing
2. Dose to onsite responders

(16) Additional Conditions

The Additional Conditions contained in Appendix C, as revised through Amendment No. 190, are hereby incorporated into this

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3.7 PLANT SYSTEMS

3.7.10 Control Room Emergency Ventilation System (CREVS)

LCO 3.7.10 Two CREVS trains shall be OPERABLE.

----- NOTE -----
The control room envelope (CRE) and control building envelope (CBE) boundaries may be opened intermittently under administrative control.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREVS train inoperable for reasons other than Condition B.	A.1 Restore CREVS train to OPERABLE status.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. One or more CREVS trains inoperable due to an inoperable CRE boundary or an inoperable CBE boundary in MODE 1, 2, 3, or 4.</p>	<p>B.1 Initiate action to implement mitigating actions.</p>	<p>Immediately</p>
	<p><u>AND</u></p> <p>B.2 Verify mitigating actions to ensure CRE occupant radiological exposure will not exceed limits and CRE occupants are protected from chemical and smoke hazards.</p>	<p>24 hours</p>
	<p><u>AND</u></p> <p>B.3 Restore the CRE boundary and CBE boundary to OPERABLE status</p>	<p>90 days</p>
<p>C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.</p>	<p>C.1 Be in MODE 3.</p>	<p>6 hours</p>
	<p><u>AND</u></p> <p>C.2 Be in MODE 5.</p>	<p>36 hours</p>

(continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Operate each CREVS train pressurization filter unit for ≥ 10 continuous hours with the heaters operating and each CREVS train filtration filter unit for ≥ 15 minutes.	31 days
SR 3.7.10.2	Perform required CREVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.10.3	Verify each CREVS train actuates on an actual or simulated actuation signal.	18 months
SR 3.7.10.4	Perform required unfiltered air inleakage testing of the CRE and CBE boundaries in accordance with the Control Room Envelope Habitability Program.	In accordance with the Control Room Envelope Habitability Program

3.7 PLANT SYSTEMS

3.7.11 Control Room Air Conditioning System (CRACS)

LCO 3.7.11 Two CRACS trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CRACS train inoperable.	A.1 Restore CRACS train to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 5.	36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. Required Action and associated Completion Time of Condition A not met in MODE 5 or 6, or during movement of irradiated fuel assemblies.</p>	<p>C.1 Place OPERABLE CRACS train in operation.</p> <p><u>OR</u></p> <p>C.2.1 Suspend CORE ALTERATIONS.</p> <p><u>AND</u></p> <p>C.2.2 Suspend movement of irradiated fuel assemblies.</p>	<p>Immediately</p> <p>Immediately</p> <p>Immediately</p>
<p>D. Two CRACS trains inoperable in MODE 5 or 6, or during movement of irradiated fuel assemblies.</p>	<p>D.1 Suspend CORE ALTERATIONS.</p> <p><u>AND</u></p> <p>D.2 Suspend movement of irradiated fuel assemblies.</p>	<p>Immediately</p> <p>Immediately</p>
<p>E. Two CRACS trains inoperable in MODE 1, 2, 3, or 4.</p>	<p>E.1 Enter LCO 3.0.3.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Verify each CRACS train has the capability to remove the assumed heat load.	18 months

3.7 PLANT SYSTEMS

3.7.12 Not Used.

3.7 PLANT SYSTEMS

3.7.13 Emergency Exhaust System (EES)

LCO 3.7.13 Two EES trains shall be OPERABLE.

----- NOTE -----
The auxiliary or fuel building boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, 3, and 4,
During movement of irradiated fuel assemblies in the fuel building.

----- NOTE -----
The SIS mode of operation is required only in MODES 1, 2, 3 and 4. The FBVIS mode of operation is required only during movement of irradiated fuel assemblies in the fuel building.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One EES train inoperable.	A.1 Restore EES train to OPERABLE status.	7 days
B. Two EES trains inoperable due to inoperable auxiliary building boundary in MODE 1, 2, 3 or 4.	B.1 Restore auxiliary building boundary to OPERABLE status.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.</p> <p><u>OR</u></p> <p>Two EES trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.</p>	<p>C.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>C.2 Be in MODE 5.</p>	<p>6 hours</p> <p>36 hours</p>
<p>D. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies in the fuel building.</p>	<p>D.1 Place OPERABLE EES train in the FBVIS mode.</p> <p><u>OR</u></p> <p>D.2 Suspend movement of irradiated fuel assemblies in the fuel building.</p>	<p>Immediately</p> <p>Immediately</p>
<p>E. Two EES trains inoperable during movement of irradiated fuel assemblies in the fuel building.</p>	<p>E.1 Suspend movement of irradiated fuel assemblies in the fuel building.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.13.1	Operate each EES train for ≥ 10 continuous hours with the heaters operating.	31 days
SR 3.7.13.2	Perform required EES filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.13.3	Verify each EES train actuates on an actual or simulated actuation signal.	18 months
SR 3.7.13.4	Verify one EES train can maintain a negative pressure ≥ 0.25 inches water gauge with respect to atmospheric pressure in the auxiliary building during the SIS mode of operation.	18 months on a STAGGERED TEST BASIS
SR 3.7.13.5	Verify one EES train can maintain a negative pressure ≥ 0.25 inches water gauge with respect to atmospheric pressure in the fuel building during the FBVIS mode of operation.	18 months on a STAGGERED TEST BASIS

3.7 PLANT SYSTEMS

3.7.14 Not Used.

3.7 PLANT SYSTEMS

3.7.15 Fuel Storage Pool Water Level

LCO 3.7.15 The fuel storage pool water level shall be \geq 23 ft over the top of the storage racks.

APPLICABILITY: During movement of irradiated fuel assemblies in the fuel storage pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Fuel storage pool water level not within limit.	A.1 ----- NOTE ----- LCO 3.0.3 is not applicable. ----- Suspend movement of irradiated fuel assemblies in the fuel storage pool.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.15.1 Verify the fuel storage pool water level is \geq 23 ft above the storage racks.	7 days

3.7 PLANT SYSTEMS

3.7.16 Fuel Storage Pool Boron Concentration

LCO 3.7.16 The fuel storage pool boron concentration shall be ≥ 2165 ppm.

APPLICABILITY: When fuel assemblies are stored in the fuel storage pool and a fuel storage pool verification has not been performed since the last movement of fuel assemblies in the fuel storage pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. Fuel storage pool boron concentration not within limit.</p>	<p>----- NOTE ----- LCO 3.0.3 is not applicable. -----</p> <p>A.1 Suspend movement of fuel assemblies in the fuel storage pool.</p> <p><u>AND</u></p> <p>A.2.1 Initiate action to restore fuel storage pool boron concentration to within limit.</p> <p><u>OR</u></p> <p>A.2.2 Verify by administrative means that a non-Region 1 fuel storage pool verification has been performed since the last movement of fuel assemblies in the fuel storage pool.</p>	<p>Immediately</p> <p>Immediately</p> <p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.16.1	Verify the fuel storage pool boron concentration is within limit.	7 days

3.7 PLANT SYSTEMS

3.7.17 Spent Fuel Assembly Storage

LCO 3.7.17 The combination of initial enrichment and burnup of each spent fuel assembly stored in Region 2 or 3 shall be within the Acceptable Domain of Figure 3.7.17-1 or in accordance with Specification 4.3.1.1.

APPLICABILITY: Whenever any fuel assembly is stored in the fuel storage pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 ----- NOTE ----- LCO 3.0.3 is not applicable. ----- Initiate action to move the noncomplying fuel assembly to Region 1.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.17.1 Verify by administrative means the initial enrichment and burnup of the fuel assembly is in accordance with Figure 3.7.17-1 or Specification 4.3.1.1.	Prior to storing the fuel assembly in Region 2 or 3

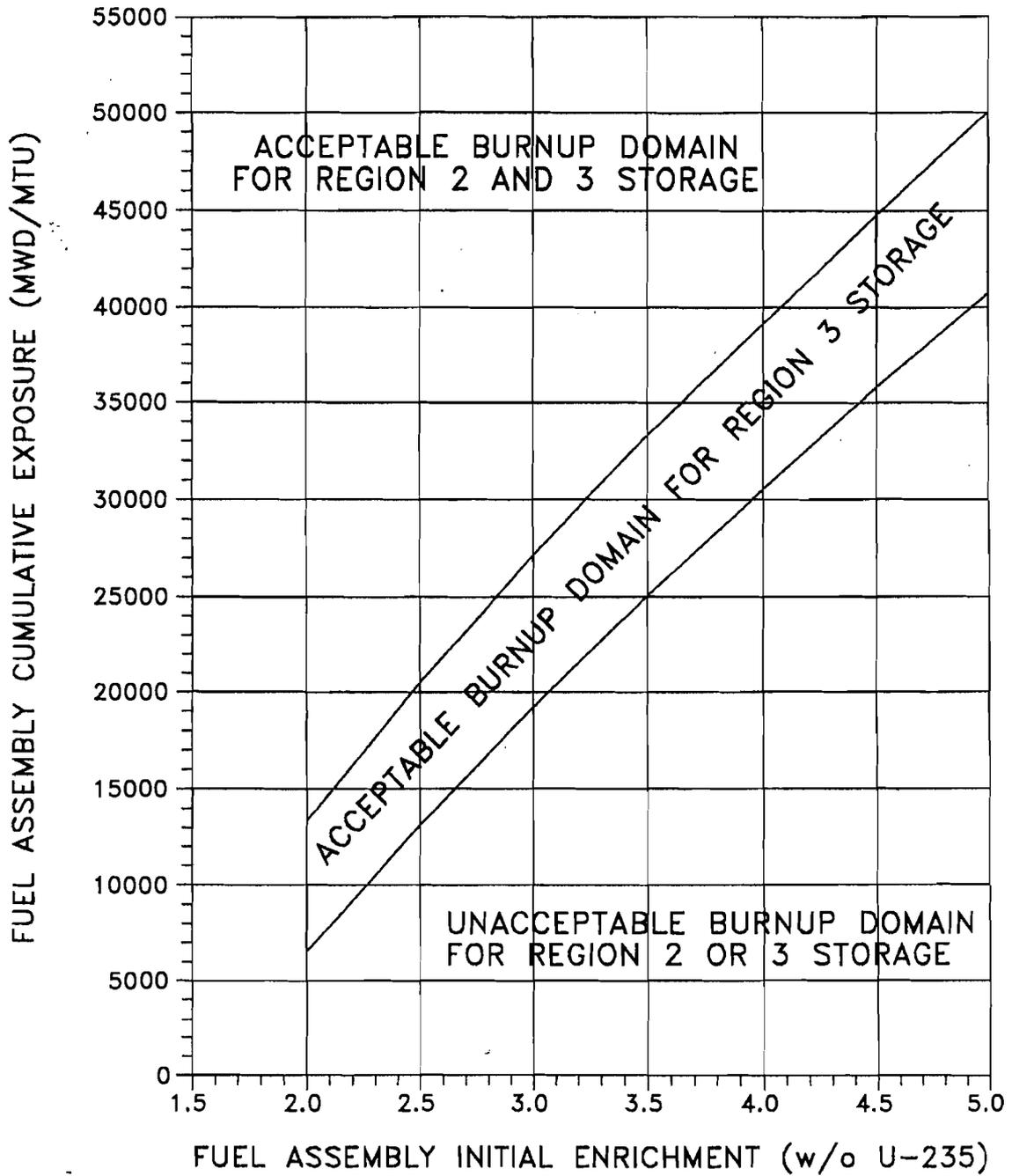


Figure 3.7.17-1 (page 1 of 1)
MINIMUM REQUIRED FUEL ASSEMBLY BURNUP AS A FUNCTION OF
INITIAL ENRICHMENT TO PERMIT STORAGE IN REGIONS 2 AND 3

3.7 PLANT SYSTEMS

3.7.18 Secondary Specific Activity

LCO 3.7.18 The specific activity of the secondary coolant shall be $\leq 0.10 \mu\text{Ci/gm}$
DOSE EQUIVALENT I-131.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Specific activity not within limit.	A.1 Be in MODE 3.	6 hours
	<u>AND</u> A.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.18.1 Verify the specific activity of the secondary coolant is $\leq 0.10 \text{ Ci/gm}$ DOSE EQUIVALENT I-131.	31 days

5.5 Programs and Manuals (continued)

5.5.17 Control Room Envelope Habitability Program

A Control Room Envelope (CRE) Habitability Program shall be established and implemented to ensure that CRE habitability is maintained such that, with an OPERABLE Control Room Emergency Ventilation System (CREVS), CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of 5 rem whole body or its equivalent to any part of the body for the duration of the accident. The program shall include the following elements:

- a. The definition of the CRE, CRE boundary, control building envelope (CBE), and the CBE Boundary.
- b. Requirements for maintaining the CRE and CBE boundaries in their design condition, including configuration control and preventive maintenance.
- c. Requirements for (i) determining the unfiltered air leakage past the CRE and CBE boundaries in accordance with the testing methods and at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003, and (ii) assessing CRE habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.

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

1. The Tracer Gas Test based on the Brookhaven National Laboratory Atmospheric Tracer Depletion (ATD) Method is used to determine the unfiltered air leakage past the CRE and CBE boundaries. The ATD Method is described in AmerenUE letters dated December 15, 2004 (ULNRC-05104), June 6, 2006 (ULNRC-05298), July 16, 2007 (ULNRC-05427), and October 30, 2007 (ULNRC-05448).
- d. Measurement, at designated locations, of the CRE pressure relative to the outside atmosphere during the pressurization mode of operation by one train of the CREVS, operating at the flow rate required by the VFTP, at a Frequency of 18 months on a STAGGERED TEST BASIS. The results shall be trended and used as part of the periodic assessment of the CRE boundary.

(continued)

5.5 Programs and Manuals

5.5.17 Control Room Envelope Habitability Program (continued)

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

 - f. The provisions of SR 3.0.2 are applicable to the Frequencies for assessing CRE habitability, determining CRE and CBE unfiltered leakage, and measuring CRE pressure and assessing CRE and CBE 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 Not Used.

5.6.2 Annual Radiological Environmental Operating Report

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted by May 1 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 Calculation Manual (ODCM), 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 ODCM, as well as summarized and tabulated results of these analyses and measurements in a format similar to the table in the Radiological Assessment Branch Technical Position, Revision 1, November 1979. 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.

5.6.3 Radioactive Effluent Release Report

The Radioactive Effluent Release Report covering the operation of the unit during the previous year shall be submitted prior to May 1 of each year, 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 ODCM and Process Control Program and in conformance with 10 CFR 50.36a and 10 CFR Part 50, Appendix I, Section IV.B.1.

5.6.4 Not used.

(continued)

5.6 Reporting Requirements

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. Moderator Temperature Coefficient limits in Specification 3.1.3,
 2. Shutdown Bank Insertion Limit for Specification 3.1.5,
 3. Control Bank Insertion Limits for Specification 3.1.6,
 4. Axial Flux Difference Limits for Specification 3.2.3,
 5. Heat Flux Hot Channel Factor, $F_Q(Z)$, F_Q^{RTP} , $K(Z)$, $W(Z)$ and F_Q Penalty Factors for Specification 3.2.1,
 6. Nuclear Enthalpy Rise Hot Channel Factor $F_{\Delta H}^N$, $F_{\Delta H}^{RTP}$, and Power Factor Multiplier, $PF_{\Delta H}$, limits for Specification 3.2.2,
 7. Shutdown Margin Limits for Specifications 3.1.1, 3.1.4, 3.1.5, 3.1.6, and 3.1.8,
 8. Reactor Core Safety Limits Figure for Specification 2.1.1,
 9. Overtemperature ΔT and Overpower ΔT Setpoint Parameters for Specification 3.3.1, and
 10. Reactor Coolant System Pressure and Temperature DNB Limits 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. WCAP-9272-P-A, "WESTINGHOUSE RELOAD SAFETY EVALUATION METHODOLOGY."
 2. WCAP-10216-P-A, "RELAXATION OF CONSTANT AXIAL OFFSET CONTROL AND FQ SURVEILLANCE TECHNICAL SPECIFICATION."
 3. WCAP-10266-P-A, "THE 1981 VERSION OF WESTINGHOUSE EVALUATION MODEL USING BASH CODE."

(continued)

5.6 Reporting Requirements

4. WCAP-12610-P-A, "VANTAGE + FUEL ASSEMBLY REFERENCE CORE REPORT."
 5. WCAP-11397-P-A, "REVISED THERMAL DESIGN PROCEDURE."
 6. WCAP-14565-P-A, "VIPRE-01 MODELING AND QUALIFICATION FOR PRESSURIZED WATER REACTOR NON-LOCA THERMAL-HYDRAULIC SAFETY ANALYSIS."
 7. WCAP-10851-P-A, "IMPROVED FUEL PERFORMANCE MODELS FOR WESTINGHOUSE FUEL ROD DESIGN AND SAFETY EVALUATIONS."
 8. WCAP-15063-P-A, "WESTINGHOUSE IMPROVED PERFORMANCE ANALYSIS AND DESIGN MODEL (PAD 4.0)."
 9. WCAP-8745-P-A, "DESIGN BASES FOR THE THERMAL OVERPOWER DT AND THERMAL OVERTEMPERATURE DT TRIP FUNCTIONS."
 10. WCAP-10965-P-A, "ANC: A WESTINGHOUSE ADVANCED NODAL COMPUTER CODE."
 11. WCAP-11596-P-A, "QUALIFICATION OF THE PHOENIX-P/ANC NUCLEAR DESIGN SYSTEM FOR PRESSURIZED WATER REACTOR CORES."
 12. WCAP-13524-P-A, "APOLLO: A ONE DIMENSIONAL NEUTRON DIFFUSION THEORY PROGRAM."
- 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.

(continued)

5.6 Reporting Requirements

5.6.6 Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

- a. RCS pressure and temperature limits for heat up, cooldown, low temperature operation, criticality, hydrostatic testing and PORV lift setting as well as heatup and cooldown rates shall be established and documented in the PTLR for the following:
 1. Specification 3.4.3, "RCS Pressure and Temperature (P/T) Limits," and
 2. Specification 3.4.12, "Cold Overpressure Mitigation System (COMS)."
- b. The analytical methods used to determine the RCS pressure and temperature and COMS PORV limits shall be those previously reviewed and approved by the NRC, specifically those described in WCAP-14040-NP-A, "Methodology Used to Develop Cold Overpressure Mitigating System Setpoints and RCS Heatup and Cooldown Limit Curves".
- c. The PTLR shall be provided to the NRC upon issuance for each reactor vessel fluence period and for any revision or supplement thereto.

5.6.7 Not used.

5.6.8 PAM Report

When a report is required by Condition B or G of LCO 3.3.3, "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.

5.6.9 Not used.

(continued)

5.6 Reporting Requirements (continued)

5.6.10 Steam Generator Tube Inspection Report

A report shall be submitted within 180 days after the initial entry into MODE 4 following completion of an inspection performed in accordance with the Specification 5.5.9, Steam Generator (SG) Program. The report shall include:

- a. The scope of inspections performed on each SG;
 - b. Active degradation mechanisms found;
 - c. Nondestructive examination techniques utilized for each degradation mechanism;
 - d. Location, orientation (if linear), and measured sizes (if available) of service induced indications;
 - e. Number of tubes plugged during the inspection outage for each active degradation mechanism;
 - f. Total number and percentage of tubes plugged to date; and
 - g. The results of condition monitoring, including the results of tube pulls and in-situ testing.
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5.0 ADMINISTRATIVE CONTROLS

5.7 High Radiation Area

As provided in paragraph 20.1601(c) of 10 CFR Part 20, the following controls shall be applied to high radiation areas in place of the controls required by paragraph 20.1601 (a) and (b) of 10 CFR Part 20:

- 5.7.1 High Radiation Areas with Dose Rates Not Exceeding 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation:
- a. Each entryway to such an area shall be barricaded and conspicuously posted as a high radiation area. Such barricades may be opened as necessary to permit entry or exit of personnel or equipment;
 - b. Access to, and activities in, each such area shall be controlled by means of Radiation Work Permit (RWP) or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.
 - c. Individuals qualified in radiation protection procedures and personnel continuously escorted by such individuals may be exempted from the requirement for an RWP or equivalent while performing their assigned duties provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.
 - d. Each individual or group entering such an area shall possess:
 1. A radiation monitoring device that continuously displays radiation dose rates in the area; or
 2. A radiation monitoring device that continuously integrates the radiation dose rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or
 3. A radiation monitoring device that continuously transmits dose rate and cumulative dose rate information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area, or
 4. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and

(continued)

5.7 High Radiation Area

5.7.1 High Radiation Areas with Dose Rates Not Exceeding 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation: (continued)

- (i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area; who is responsible for controlling personnel exposure within the area, or
 - (ii) Be under the surveillance as specified in the RWP or equivalent, while in the area, by means of closed circuit television, of personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with individuals in the area who are covered by such surveillance.
- e. Except for individuals qualified in radiation protection procedures, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them.

5.7.2 High Radiation Areas with Dose Rates Greater than 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation, but less than 500 rads/hour at 1 Meter from the Radiation Source or from any Surface Penetrated by the Radiation:

- a. Each entryway to such an area shall be conspicuously posted as a high radiation area and shall be provided with a locked or continuously guarded door or gate that prevents unauthorized entry, and, in addition:
 - 1. All such door and gate keys shall be maintained under the administrative control of the Shift Manager/Operating Supervisor or Radiation Protection Department Supervision, or his or her designee.
 - 2. Doors and gates shall remain locked except during periods of personnel or equipment entry or exit.
- b. Access to, and activities in, each such area shall be controlled by means of an RWP or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.

(Continued)

5.7 High Radiation Area

5.7.2 High Radiation Areas with Dose Rates Greater than 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation, but less than 500 rads/hour at 1 Meter from the Radiation Source or from any Surface Penetrated by the Radiation: (continued)

- c. Individuals qualified in radiation protection procedures may be exempted from the requirement for an RWP or equivalent while performing radiation surveys in such areas provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.
- d. Each individual or group entering such an area shall possess:
 - 1. A radiation monitoring device that continuously integrates the radiation rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or
 - 2. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area with the means to communicate with and control every individual in the area, or
 - 3. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and
 - (i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area; who is responsible for controlling personnel exposure within the area, or
 - (ii) Be under the surveillance as specified in the RWP or equivalent, while in the area, by means of closed circuit television, of personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with and control every individual in the area, or
 - 4. In those cases where options (2) and (3), above, are impractical or determined to be inconsistent with the "As Low As is Reasonably

(Continued)

5.7 High Radiation Area

5.7.2 High Radiation Areas with Dose Rates Greater than 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation, but less than 500 rads/hour at 1 Meter from the Radiation Source or from any Surface Penetrated by the Radiation: (continued)

Achievable” principle, a radiation monitoring device that continuously displays radiation dose rates in the area.

- e. Except for individual qualified in radiation protection procedures or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them.
 - f. Such individual areas that are within a larger area, such as PWR containment, where no enclosure exists for the purpose of locking and where no enclosure can reasonably be constructed around the individual area need not be controlled by a locked door or gate nor continuously guarded, but shall be barricaded, conspicuously posted, and a clearly visible flashing light shall be activated at the area as a warning device.
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Amendment Number	Additional Conditions	Implementation Date
133	<p>For SRs that existed prior to this amendment that have modified acceptance criteria, the first performance is due at the end of the first surveillance interval that began on the date the surveillance was last performed prior to the implementation of this amendment.</p> <p>For SRs that existed prior to this amendment whose intervals of performance are being extended, the first extended surveillance interval begins upon completion of the last surveillance performed prior to implementation of this amendment.</p>	The amendment shall be implemented by April 30, 2000.
180	<p>Technical Specification (TS) 3.6.7 requires the Recirculation Fluid pH Control System to be OPERABLE and Surveillance Requirement (SR) 3.6.7.2 requires verification that the sump pH be \geq 7.1. Trisodium phosphate crystalline (TSP-C) will be used for pH control as described in TS Bases 3.6.7. NRC approval is required prior to using a different chemical for pH control.</p>	Prior to MODE 4 ascending during startup from the Refuel 15 outage.
190	<p>Upon implementation of License Amendment adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) and control building envelope (CBE) boundary unfiltered air inleakage as required by SR 3.7.10.4, in accordance with TS 5.5.17.c.(i), the assessment of CRE habitability as required by Specification 5.5.17.c.(ii), and the measurement of control room pressure as required by Specification 5.5.17.d, shall be considered met. Following implementation:</p> <p>(a) The first performance of SR 3.7.10.4, in accordance with Specification 5.5.17.c.(i), shall be within the specified Frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from September 19, 2004, the date of the most recent successful tracer gas test, as stated in the December 15, 2004, letter response to Generic Letter 2003-01, or within the next 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.</p>	The amendment shall be implemented within 120 days from the date of its issuance.

Amendment Number	Additional Conditions	Implementation Date
190 (cont'd)	<p>(b) The first performance of the periodic assessment of CRE habitability, Specification 5.5.17.c.(ii), shall be within 3 years, plus the 9-month allowance of SR 3.0.2, as measured from September 19, 2004, the date of the most recent successful tracer gas test, as stated in the November 16, 2004, letter response to Generic Letter 2003-01, or within the next 9 months if the time period since the most recent successful tracer gas test is greater than 3 years.</p> <p>(c) The first performance of the periodic measurement of control room pressure, Specification 5.5.17.d, shall be within 18 months plus the 138 days allowed by SR 3.0.2, as measured from March 16, 2007, the date of the most recent successful pressure measurement test.</p>	



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 190 TO

FACILITY OPERATING LICENSE NO. NPF-30

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

1.0 INTRODUCTION

By application dated January 14, 2008 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML080230473), as supplemented by letters dated November 26 and December 17, 2008 (ADAMS Accession Nos. ML083440311 and ML083659359, respectively), Union Electric Company (the licensee) requested changes to the Technical Specifications (TS) for the Callaway Plant, Unit 1 (Callaway). The proposed amendment allows Callaway to adopt the U.S. Nuclear Regulatory Commission (NRC)-approved Industry TS Task Force (TSTF) Traveler TSTF-448, Revision 3, "Control Room Habitability." The availability of this TS improvement was published in the *Federal Register* on January 17, 2007 (72 FR 2022), as part of the Consolidated Line Item Improvement Process.

The supplemental letters dated November 26 and December 17, 2008 (ADAMS Accession Nos. ML083440311 and ML083659359, respectively), provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on October 21, 2008 (73 FR 62570).

On August 8, 2006, the commercial nuclear electrical power generation industry owners group TSTF submitted a proposed change, TSTF-448, Revision 3, to the improved standard technical specifications (STS) (NUREGs 1430 through 1434) on behalf of the industry (TSTF-448, Revisions 0, 1, and 2 were prior draft iterations). TSTF-448, Revision 3, is a proposal to establish more effective and appropriate action, surveillance, and administrative STS requirements related to ensuring the habitability of the control room envelope (CRE).

In NRC Generic Letter (GL) 2003-01, "Control Room Habitability" (Reference 1), NRC alerted licensees to findings at facilities that existing TS surveillance requirements (SRs) for the Control Room Envelope Emergency Ventilation System (CREEVS) may not be adequate. Specifically, the results of American Society for Testing and Materials (ASTM) E741 (Reference 2) tracer gas tests to measure CRE unfiltered inleakage at facilities indicated that the differential pressure

surveillance is not a reliable method for demonstrating CRE boundary operability. Licensees were requested to address their existing TSs as follows:

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

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

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

Consistent with the traveler as incorporated into NUREG-1431, Vol. 1, Revision 3, "Standard Technical Specifications, Westinghouse Plants," the licensee proposed revising actions and SRs in TS 3.7.10, "Control Room Emergency Ventilation System (CREVS)," and adding a new administrative controls program, TS 5.5.17, "Control Room Envelope Habitability Program." The purpose of the changes is to ensure that CRE boundary operability is maintained and verified through effective surveillance and programmatic requirements, and that appropriate remedial actions are taken in the event of an inoperable CRE boundary.

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

2.0 REGULATORY EVALUATION

2.1 Control Room and Control Room Envelope

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

Control Room: The plant area, defined in the facility licensing basis, in which actions can be taken to operate the plant safely under normal conditions and to

maintain the reactor in a safe condition during accident situations. It encompasses the instrumentation and controls necessary for a safe shutdown of the plant and typically includes the critical document reference file, computer room (if used as an integral part of the emergency response plan), shift supervisor's office, operator wash room and kitchen, and other critical areas to which frequent personnel access or continuous occupancy may be necessary in the event of an accident.

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

NRC Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003 (Reference 5), also contains these definitions, but uses the term CRE to mean both. This is because the protected environment provided for operators varies with the nuclear power facility. At some facilities, this environment is limited to the control room; at others, it is the CRE. In this safety evaluation, consistent with the proposed changes to the STS, the CRE will be used to designate both.

2.2 Control Room Emergency Ventilation System (CREVS)

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

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

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

- Control Room air conditioner, filtration, and pressurization fans are OPERABLE;
- High-efficiency particulate air (HEPA) filters and charcoal adsorbers are not excessively restricting flow, and are capable of performing their filtration functions; and
- Heater, moisture separator, ductwork, valves, and dampers are OPERABLE and air circulation can be maintained.

In order for the CREVS trains to be considered OPERABLE, the CRE and control building environment (CBE) boundaries 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.

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

2.3 Regulations Applicable to Control Room Habitability

In Section 50.36 of Title 10 of the *Code of Federal Regulations* (10 CFR), "Technical Specifications," the NRC established its regulatory requirements related to the content of TS. Pursuant to 10 CFR 50.36, TSs are required to include items in the following five specific categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) surveillance requirements (SRs); (4) design features; and (5) administrative controls. The rule does not specify the particular requirements to be included in a plant's TS. As stated in 10 CFR 50.36(d)(2)(i), the "[l]imiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility." The regulations in 10 CFR 50.36(d)(3) state that "[s]urveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components will be maintained within safety limits, and that the limiting conditions for operation will be met."

In Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," General Design Criteria (GDC) 1, 2, 3, 4, 5, and 19 apply to CRE habitability. A summary of these GDCs follows. Facilities not licensed under the GDC from 10 CFR Part 50 are licensed under similar plant-specific design criteria, as described in the facility's licensing basis documents.

Callaway's updated final safety analysis report (UFSAR) Section 3.1, "Conformance with NRC general design criteria," discusses the extent to which the design criteria for SNUPPS [Callaway/Standardized Nuclear Unit Power Plant System] plant structures, systems, and components (SSCs) important to safety comply with the GDCs.

GDC 1, "Quality standards and records," requires that SSCs important to safety be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety functions performed.

GDC 2, "Design basis for protection against natural phenomena," requires that SSCs important to safety be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunamis, and seiches without loss of capability to perform their safety functions.

GDC 3, "Fire protection," requires that SSCs important to safety be designed and located to minimize the probability and effect of fires and explosions.

GDC 4, "Environmental and dynamic effects design bases," requires that SSCs important to safety to be designed to accommodate the effects of and to be compatible with the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents, including loss-of-coolant accidents (LOCAs).

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

GDC 19, "Control room," requires that a control room be provided from which actions can be taken to operate the nuclear power unit safely under normal conditions and to maintain it in a safe condition under accident conditions, including LOCAs. Adequate radiation protection shall be provided to permit access and occupancy of the control room under accident 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.

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

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

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

In addition to an inadequate SR, the action requirements of these TSs were ambiguous regarding CRE boundary operability in the event CRE unfiltered inleakage is found to exceed

the analysis assumption. The ambiguity stemmed from the view that the CRE boundary may be considered operable but degraded in this condition, and that it would be deemed inoperable only if calculated radiological exposure limits for CRE occupants exceeded a licensing basis limit (e.g., as stated in GDC 19, even while crediting compensatory measures).

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

Licensees that have found unfiltered leakage in excess of the limit assumed in the safety analyses and have yet to either reduce the leakage below the limit or establish a higher bounding limit through re-analysis, have implemented compensatory actions to ensure the safety of CRE occupants, pending final resolution of the condition, consistent with RIS 2005-20. However, based on GL 2003-01 and AL 98-10, the NRC staff expects each licensee to propose TS changes that include a surveillance to periodically measure CRE unfiltered leakage in order to satisfy 10 CFR 50.36(c)(3), which requires a facility's TS to include SRs, which it defines as "requirements relating to test, calibration, or inspection to assure that the necessary quality of [structures,] systems and components is maintained, that facility operation will be within safety limits, and that limiting conditions for operation will be met."

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

2.4 Adoption of TSTF-448, Revision 3, by Callaway

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

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

3.0 TECHNICAL EVALUATION

The NRC staff reviewed the proposed changes against the corresponding changes made to the STS by TSTF-448, Revision 3, which the NRC staff has found to satisfy applicable regulatory requirements, as described above in Section 2.0. The emergency operational mode of the CREVS at Callaway pressurizes the CRE to minimize unfiltered air leakage. The proposed changes are consistent with this design.

Proposed TS Changes

The proposed amendment would strengthen CRE habitability TS requirements by changing TS 3.7.10, "Control Room Emergency Ventilation System (CREVS)," and adding a new TS administrative controls program for CRE habitability. Accompanying the proposed TS changes are appropriate conforming technical changes to the TS Bases. The proposed revision to the Bases also includes editorial and administrative changes to reflect applicable changes to the corresponding STS Bases, which were made to improve clarity, conform with the latest information and references, correct factual errors, and achieve more consistency among the STS NUREGs. Except for plant-specific differences, all of these changes are consistent with STS as revised by TSTF-448, Revision 3.

The NRC staff compared the proposed TS changes to the STS and the STS markups and evaluations in TSTF-448. The NRC staff verified that differences from the STS were adequately justified on the basis of plant-specific design or retention of the current licensing basis. The NRC staff also reviewed the proposed changes to the TS Bases for consistency with the STS Bases and the plant-specific design and licensing bases, although approval of the Bases is not a condition for accepting the proposed amendment. However, TS 5.5.14, "TS Bases Control Program," provides assurance that the licensee has established and will maintain the adequacy of the Bases. The proposed Bases for TS 3.7.10 refer to specific guidance in Nuclear Energy Institute (NEI) 99-03, "Control Room Habitability Assessment Guidance," Revision 0, dated June 2001 (Reference 6), which the NRC staff has formally endorsed, with exceptions, through Regulatory Guide 1.196 (Reference 4). The proposed TS changes by Callaway are discussed below.

3.1 Editorial Changes

The licensee proposed editorial changes to TS 3.7.10, "Control Room Emergency Ventilation System (CREVS)," to establish standard terminology, such as "control room envelope (CRE)" in place of "control room," except for the plant-specific name for the CREVS (plant-specific name for CREEVS), and "radiological, chemical, and smoke hazards (or challenges)" in place of various phrases to describe the hazards that CRE occupants are protected from by the CREVS. The licensee also proposed to correct a typographical error by replacing "In accordance with VFTP" with "In accordance with the VFTP" in the frequency of SR 3.7.10.2. These changes

improve the usability and quality of the presentation of the TS, have no impact on safety and, therefore, are acceptable.

3.2 TS 3.7.10, CREVS

The licensee proposed to revise the action requirements of TS 3.7.10, "Control Room Emergency Ventilation System (CREVS)," to acknowledge that an inoperable CRE boundary, depending upon the location of the associated degradation, could cause just one, instead of both CREVS trains to be inoperable. This is accomplished by revising Condition A to exclude Condition B, and revising Condition B to address one or more CREVS trains, as follows:

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

This change clarifies how to apply the action requirements in the event just one CREVS 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 and 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.

The Callaway Plant CBE, by and large, surrounds the CRE. Also, the CBE is required to be at positive pressure with respect to its surrounding environment, although not at positive pressure with respect to the CRE. Therefore, the addition of the NOTE under LCO 3.7.10, "The control room envelope (CRE) and control building envelope (CBE) may be opened intermittently under administrative control," is acceptable.

The licensee proposed to replace existing Required Action B.1, "Restore control room boundary to OPERABLE status," which has a 24-hour Completion Time, with (1) Required Action B.1, to immediately initiate action to implement mitigating actions; (2) Required Action B.2, to verify, within 24 hours, that CRE occupant radiological exposures will not exceed limits and CRE occupants are protected from chemical and smoke hazards; and (3) Required Action B.3, to restore CRE and CBE boundaries 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 and CBE boundaries. Therefore, proposed Actions B.1, B.2, and B.3 are acceptable.

The licensee proposed to add a new condition to Action E of TS 3.7.10 that states, "One or more CREVS trains inoperable due to an inoperable CRE boundary or an inoperable CBE boundary in MODE 5 or 6, or during movement of irradiated fuel assemblies." The specified Required Action proposed for this condition is the same as for the existing condition of Action E which states "Two CREVS trains inoperable in MODE 5 or 6, or during movement of irradiated fuel assemblies." Accordingly, the new condition is stated with the other condition in Action E using the logical connector "OR." The practical result of this presentation in format is the same as specifying two separately numbered Actions, one for each condition. Its advantage is to make the TS Actions table easier to use by avoiding having an additional numbered row in the Actions table. The new condition in Action E is needed because proposed Action B will only apply in Modes 1, 2, 3, or 4. As such, this change will ensure that the Actions table continues to specify a condition for an inoperable CRE boundary or an inoperable CBE boundary during Modes 5 or 6 and during refueling. This change is administrative and, therefore, is acceptable.

In the emergency conditions, the CREVS isolates unfiltered ventilation air supply intakes, filters the emergency ventilation air supply to the CRE, and pressurizes the CRE to minimize unfiltered air leakage past the CRE boundary. The licensee proposed to delete the CRE pressurization SR. This SR requires verifying that one CREVS train, operating in emergency conditions, can maintain a pressure of 0.125 inches water gauge, relative to the outside atmosphere during the pressurization mode of operation at a makeup flow rate of 500 cubic feet per minute (cfm). The deletion of this SR is proposed because measurements of unfiltered air leakage into the CRE at numerous reactor facilities demonstrated that a basic assumption of this SR, an essentially leak-tight CRE boundary, was incorrect for most facilities. Hence, meeting this SR by achieving the required CRE pressure is not necessarily a conclusive indication of CRE boundary leak tightness (i.e., CRE boundary operability). In its response to GL 2003-01, dated December 15, 2004, the licensee reported that the Callaway CRE pressurization surveillance, SR 3.7.10.4, was inadequate to demonstrate the operability of the CRE boundary, and proposed to replace it with an leakage measurement SR and a CRE Habitability Program in TS Section 5.5, "Programs and Manuals," in accordance with the approved version of TSTF-448. Based on the adoption of TSTF-448, Revision 3, the licensee's proposal to delete SR 3.7.10.4 is acceptable.

The proposed CRE leakage measurement SR states "Perform required unfiltered air leakage testing of the CRE and CBE boundaries in accordance with the Control Room Envelope Habitability Program." The proposed TS 5.5.17, "Control Room Envelope Habitability Program," requires that the program include requirements for determining the unfiltered air leakage past the CRE and CBE boundaries 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, Revision 0 (Reference 5). This guidance references ASTM E741 (Reference 2) as an acceptable method for ascertaining the unfiltered leakage into the CRE. The licensee has, however, not proposed to follow this method. The NRC staff reviewed the licensee's proposed alternative method for measuring CRE leakage to ensure it meets the criteria for such methods given in Regulatory Guide 1.197. By letter dated November 30, 2007 (ADAMS Accession No. ML073300475), the NRC staff informed the licensee that the alternative method used by Callaway (Brookhaven National Laboratory-developed Atmospheric Tracer Depletion (ATD) test) is consistent with the guidance of Regulatory Guide 1.197, and the staff concluded that the ATD method is acceptable for Callaway.

In its letter dated November 30, 2007, the NRC staff wrote:

In your October 30, 2007, letter, you provided the 12 types of information identified in Regulatory Guide (RG) 1.197, "Demonstrating Control Room Envelope Integrity At Nuclear Power Reactors," Regulatory Position C.1.3, as being needed for the staff to assess the capability and thus the acceptability of an alternate test method for determining the Callaway CRE inleakage. In this information, you included details of testing performed at another nuclear plant that demonstrated a correlation in results between ASTM E 741 method and ATD method tests that met the comparability standard of RG 1.197, Regulatory Position 1.2. Although the correlation testing described did not consider a configuration with the unique Control Building/Control Room design of Callaway and how non-conservative an ASTM E 741 method test result might be relative to the ATD method used at Callaway, the NRC staff reviewed the information you provided and determined that, for your design of Control Building pressurization/filtration and Control Room pressurization/filtration, the ATD method test as you described is consistent with the guidance of RG 1.197 and the NRC staff concludes that the ATD method is acceptable for Callaway.

The NRC staff finds that the proposed alternative method satisfies the criteria of RG 1.197. Therefore, the proposed CRE inleakage measurement SR is acceptable.

3.3 TS 5.5.17, Control Room Envelope Habitability Program

The proposed administrative controls program TS is consistent with the model program TS in TSTF-448, Revision 3. In combination with SR 3.7.10.4, this program is intended to ensure the operability of the CRE boundary which, as part of an operable CREVS, will ensure that CRE habitability is maintained such that CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under DBA conditions without personnel receiving radiation exposures in excess of 5 rem whole body or its equivalent to any part of the body for the duration of the accident.

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

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

- Configuration control and preventive maintenance of the CRE boundary. This element is intended to ensure the CRE boundary is maintained in its design condition. Guidance for implementing this element is contained in Regulatory Guide 1.196 (Reference 4), which endorsed, with exceptions, NEI 99-03 (Reference 6). Maintaining the CRE boundary in its design condition provides assurance that its leak-tightness will not significantly degrade between CRE inleakage determinations.
- Assessment of CRE habitability at the frequencies stated in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0 (Reference 5), and measurement of unfiltered air leakage into the CRE in accordance with the testing methods and at the frequencies stated in Sections C.1 and C.2 of Regulatory Guide 1.197. The licensee proposed in its January 14, 2008, application, the following exception to Sections C.1 and C.2 of Regulatory Guide 1.197, to be listed in the TS with this program element:

The Tracer Gas Test based on the Brookhaven National Laboratory Atmospheric Tracer Depletion (ATD) Method is used to determine the unfiltered air inleakage past the CRE boundary in the CRE. The ATD Method is described in AmerenUE letters dated December 15, 2004 (ULNRC-05104), June 6, 2006 (ULNRC-05298), July 16, 2007 (ULNRC-05427), and October 30, 2007 (ULNRC-05448).

As noted in Section 3.2 of this safety evaluation, the NRC letter dated November 30, 2007, concluded that the ATD method is acceptable for Callaway.

This element is intended to ensure that the plant assesses CRE habitability consistent with Sections C.1 and C.2 of Regulatory Guide 1.197 and NRC-approved exceptions assessing CRE habitability at the NRC-accepted frequencies provides assurance that significant degradation of the CRE boundary will not go undetected between CRE inleakage determinations. Determination of CRE inleakage using test methods acceptable to the NRC staff assures that test results are reliable for ascertaining CRE boundary operability. Determination of CRE inleakage at the NRC-accepted frequencies provides assurance that significant degradation of the CRE boundary will not occur between CRE inleakage determinations.

- Measurement of CRE pressure, with respect to outside atmosphere at designated locations on the CRE boundary, for use in assessing the CRE boundary at a frequency of 18 months on a staggered test basis (with respect to the CREVS trains). This element is intended to ensure that CRE differential pressure is regularly measured to identify changes in pressure warranting evaluation of the condition of the CRE boundary. Obtaining and trending pressure data provides additional assurance that significant degradation of the CRE boundary will not go undetected between CRE inleakage determinations.

- Quantitative limits on unfiltered inleakage. This element is intended to establish the CRE inleakage limit as the CRE unfiltered infiltration rate assumed in the CRE occupant radiological consequence analyses of DBAs. Having an unambiguous criterion for the CRE boundary to be considered operable in order to meet LCO 3.7.10, will ensure that associated action requirements will be consistently applied in the event of CRE degradation resulting in inleakage exceeding the limit.

Consistent with TSTF-448, Revision 3, the program states that the provisions of SR 3.0.2 are applicable to the program frequencies for performing the activities required by program paragraph number c, parts (i) and (ii) (assessment of CRE habitability and measurement of CRE inleakage), and paragraph number d (measurement of CRE differential pressure). This statement is needed to avoid confusion. SR 3.0.2 is applicable to the surveillance that references the testing in the CRE Habitability Program. However, SR 3.0.2 is not applicable to administrative controls unless specifically invoked. Providing this statement in the program eliminates any confusion regarding whether SR 3.0.2 is applicable, and is acceptable.

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

3.4 License Conditions

In its letter dated January 14, 2008, the licensee agreed to add license conditions related to the initial performance of new surveillance and assessment requirements. Appendix C, "Additional Conditions," to Facility Operating License No. NPF-30 is hereby amended to add a new license condition, designated as Amendment No. 190, to read as follows:

Upon implementation of License Amendment adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) and control building envelope (CBE) boundary unfiltered air inleakage as required by SR 3.7.10.4, in accordance with TS 5.5.17.c.(i), the assessment of CRE habitability as required by Specification 5.5.17.c.(ii), and the measurement of control room pressure as required by Specification 5.5.17.d, shall be considered met. Following implementation:

- (a) The first performance of SR 3.7.10.4, in accordance with Specification 5.5.17.c.(i), shall be within the specified Frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from September 19, 2004, the date of the most recent successful tracer gas test, as stated in the December 15, 2004, letter response to Generic Letter 2003-01, or within the next 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.

- (b) The first performance of the periodic assessment of CRE habitability, Specification 5.5.17.c.(ii), shall be within 3 years, plus the 9-month allowance of SR 3.0.2, as measured from September 19, 2004, the date of the most recent successful tracer gas test, as stated in the November 16, 2004, letter response to Generic Letter 2003-01, or within the next 9 months if the time period since the most recent successful tracer gas test is greater than 3 years.
- (c) The first performance of the periodic measurement of control room pressure, Specification 5.5.17.d, shall be within 18 months plus the 138 days allowed by SR 3.0.2, as measured from March 16, 2007, the date of the most recent successful pressure measurement test.

The license conditions are based on the model license condition issued by the NRC on February 2, 2007 (ADAMS Accession No. ML070330657). Therefore, the proposed license condition is acceptable to the staff.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Missouri State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards considerations, and there has been no public comment on the finding published in the *Federal Register* on October 21, 2008 (73 FR 62570). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and (c)(10). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

7.0 REFERENCES

1. U.S. Nuclear Regulatory Commission (NRC) Generic Letter 2003-01, "Control Room Habitability," dated June 12, 2003 (ADAMS Accession No. ML031620248).
2. American Society for Testing and Materials (ASTM) E741-00, "Standard Test Method for Determining Air Change in a Single Zone by Means of a Tracer Gas Dilution," 2000.
3. U.S. Nuclear Regulatory Commission (NRC) Regulatory Issue Summary 2005-20, Revision 1, "Revision to NRC Inspection Manual Part 9900 Technical Guidance, "Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety," dated April 16, 2008 (ADAMS Accession No. ML073440103).
4. U.S. Nuclear Regulatory Commission (NRC) Regulatory Guide 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," Revision 0, dated May 2003 (ADAMS Accession No. ML063560144).
5. U.S. Nuclear Regulatory Commission (NRC) Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, dated May 2003 (ADAMS Accession No. ML031490664).
6. Nuclear Energy Institute (NEI) 99-03, "Control Room Habitability Assessment Guidance," Revision 0, dated June 2001.

Principal Contributors: R. Dennig
H. Walker

Date: January 27, 2009

January 27, 2009

Mr. Adam C. Heflin
Senior Vice President and
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Union Electric Company
P.O. Box 620
Fulton, MO 65251

SUBJECT: CALLAWAY PLANT, UNIT 1 - ISSUANCE OF AMENDMENT RE:
APPLICATION TO REVISE TECHNICAL SPECIFICATIONS REGARDING
CONTROL ROOM ENVELOPE HABITABILITY IN ACCORDANCE WITH
TSTF-448, REVISION 3 (TAC NO. MD8006)

Dear Mr. Heflin:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 190 to Facility Operating License No. NPF-30 for the Callaway Plant, Unit 1. This amendment consists of changes to the Technical Specifications (TSs), in response to your application dated January 14, 2008, as supplemented by letters dated November 26 and December 17, 2008.

The amendment adds a new license condition on the control room envelope (CRE) habitability program, revises the TS requirements related to the CRE habitability in TS 3.7.10, "Control Room Emergency Ventilation System (CREVS)," and establishes a CRE habitability program in TS Section 5.5, "Administrative Controls – Programs and Manuals." These changes are consistent with the NRC-approved Industry/TS Task Force (TSTF) Traveler TSTF-448, Revision 3, "Control Room Habitability." The availability of this TS improvement was published in the *Federal Register* on January 17, 2007 (72 FR 2022), as part of the Consolidated Line Item Improvement Process.

A copy of the related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

/RA/

Mohan C. Thadani, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosures:

1. Amendment No. 190 to NPF-30
2. Safety Evaluation

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ADAMS Accession No. ML090020064

*SE input memo dated

**See previous concurrence

OFFICE	NRR/LPL4/PE	NRR/LPL4/PM	NRR/LPL4/LA	DIRS/ITSB/BC	DSS/SCVB/BC	OGC	NRR/LPL4/BC	NRR/LPL4/PM
NAME	NDiFrancesco**	MThadani**	JBurkhardt**	Not Required	RDennig *	Not Required	MMarkley	MThadani
DATE	1/13/09	1/22/09	1/12/09	--	12/19/08	--	1/27/09	1/27/09

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