AmerenUE
Callaway Plant

PO Box 620
Fulton, MO 65251

December 17, 2008

ULNRC-05578

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Stop P1-137
Washington, DC 20555-0001

10 CFR 50.90

Ladies and Gentlemen:

DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
UNION ELECTRIC CO.
FACILITY OPERATING LICENSE NPF-30
RE-SUBMITTAL OF RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION REGARDING CONTROL ROOM ENVELOPE HABITABILITY TECHNICAL SPECIFICATION REVISION IN ACCORDANCE WITH TSTF-448, REVISION 3 (OL-1287, TAC NO. MD8006)

By letter dated November 26, 2008, AmerenUE submitted its response to an NRC request for additional information (RAI) regarding a license amendment application that AmerenUE originally submitted on January 14, 2008. The RAI response letter also contained proposed revisions to the Technical Specification changes proposed in AmerenUE's January 14, 2008 amendment application.

The RAI response letter, i.e., ULNRC-05565, "Response to Request for Additional Information Regarding Control Room Envelope Habitability Technical Specification Revision in Accordance with TSTF-448, Revision 3 (OL-1287, TAC NO. MD8006)," included several attachments. Attachment 2, in particular, was intended to be a partially revised mark-up of the Technical Specifications addressed by AmerenUE's amendment application. (Specifically, the marked-up TS pages provided by Attachment 2 were to supersede the corresponding marked-up TS pages provided in the original amendment application.) However, per the letter that was mailed to the NRC Document Control Desk on November 26, 2008, Attachment 2 did not include the intended mark-up to Technical Specification Surveillance Requirement (SR) 3.7.10.4. That is, although the intended page from the Technical

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Specifications was provided (i.e., TS page 3.7-28), it was not electronically marked-up as intended.

This omission was discussed with the NRC Project Manager for Callaway on December 10, 2008, and it was agreed that AmerenUE should re-submit letter ULNRC-05565 with the corrected Attachment 2 included, i.e., with the TS page marked-up as intended. Accordingly, this letter re-transmits ULNRC-05565 in its entirety, which is provided as an enclosure.

Please accept our apology for any confusion or inconvenience this may have caused.

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

Sincerely,

Executed on: 12-17-2008

Luke H. Graessle
Director, Operations Support

TBE/nls

Enclosure

cc: Mr. Elmo E. Collins, Jr.
Regional Administrator
U.S. Nuclear Regulatory Commission
Region IV
612 E . Lamar Blvd., Suite 400
Arlington, TX 76011-4125

Senior Resident Inspector
Callaway Resident Office
U.S. Nuclear Regulatory Commission
8201 NRC Road
Steedman, MO 65077

Mr. Mohan C. Thadani (2 copies)
Licensing Project Manager, Callaway Plant
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Mail Stop O-8G14
Washington, DC 20555-2738

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Mr. Floyd Gilzow (DNR)

Enclosure
to ULNRC-05578

AmerenUE
Callaway Plant

PO Box 620
Fulton, MO 65251

November 26, 2008

ULNRC-05565

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RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION REGARDING CONTROL ROOM ENVELOPE HABITABILITY TECHNICAL SPECIFICATION REVISION IN ACCORDANCE WITH TSTF-448, REVISION 3 (OL-1287, TAC NO. MD8006)

Reference: 1. AmerenUE letter ULNRC-05463, "Revision to Technical Specification Regarding Control Room Envelope Habitability in Accordance with TSTF-448, Revision 3, Using the Consolidated Line Item Improvement Process (OL-1287)," dated January 14, 2008

In Reference 1 above AmerenUE requested a license amendment that would revise Callaway Technical Specification (TS) 3.7.10, "Control Room Emergency Ventilation System (CREVS)," and would add new TS 5.5.17, "Control Room Habitability Program." The proposed TS changes were based on Technical Specification Task Force (TSTF) traveler TSTF-448, Revision 3, "Control Room Habitability."

From the NRC's ongoing review of the subject license amendment request (LAR), a request for additional information (RAI) was received electronically from the NRC on October 9, 2008. Attachment 1 provides a response to the request for additional information.

In responding to the NRC's RAI, it was determined that some changes should be made to the TS changes originally proposed per Reference 1. Therefore,

Attachment 2 provides revised/marked-up TS pages that supersede specific pages provided in Reference 1. Specifically, TS page 3.7-27 of Attachment 2 of this submittal replaces TS page 3.7-27 of Attachment 2 of Reference 1, and Insert 5.5.17 of Attachment 2 of this submittal replaces Insert 5.5.17 of Attachment 2 of Reference 1. Attachment 3 provides revised (clean) TS pages 3.7-28, 5.0-20, and 5.0-21.

Corresponding revisions of the TS Bases changes originally provided (for information only) per Reference 1 are also proposed. Thus, Attachment 4 provides revised marked-up TS Bases pages, for information only, that supersede specified pages provided in Reference 1. In particular, Insert B 3.7.10 BKG 2 of Attachment 4 of this submittal replaces Insert B 3.7.10 BKG 2 of Attachment 5 of Reference 1. Final TS Bases changes will be processed under Callaway's program for updates per TS 5.5.14, "Technical Specifications Bases Control Program," when the requested amendment is implemented.

AmerenUE is proposing one additional change to the proposed TS 5.5.17, based on TSTF-508, Revision 0, "Revise Control Room Habitability Actions to Address Lessons Learned from TSTF-448 Implementation." This change is further discussed in Attachment 1.

The proposed revisions to the originally proposed TS changes and the additional information provided in the Attachments to this letter do not impact the conclusions of the no significant hazards consideration determination published in the Federal Register on January 17, 2007 (72 FR 2022) as part of the Consolidated Line Item Improvement Process and which was incorporated into Reference 1.

This revision to the amendment application was reviewed by the Onsite Review Committee and the Nuclear Safety Review Board. In accordance with 10 CFR 50.91, a copy of this amendment application, including the attachments, is being provided to the designated Missouri State official.

This letter contains no commitments. Please contact Tom Elwood, Supervising Engineer, Regulatory Affairs and Licensing at 573-676-6479 for any questions you may have regarding this issue.

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

Sincerely,

Executed on: 11-26-08

Luke H. Graessle
Director, Operations Support

BFH/nls

Attachments:
1. Response to NRC Request for Additional Information
2. Revised Proposed Technical Specification Changes (Mark-up)
3. Revised (Clean) Technical Specification Pages
4. Revised Proposed Technical Specification Bases Changes (Mark-up)

cc: Mr. Elmo E. Collins, Jr.
Regional Administrator
U.S. Nuclear Regulatory Commission
Region IV
612 E . Lamar Blvd., Suite 400
Arlington, TX 76011-4125

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Callaway Resident Office
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RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION

The Nuclear Regulatory Commission (NRC) provided electronically on October 9, 2008, a request for additional information (RAI) related to a license amendment request in which AmerenUE proposed revisions to the Callaway Plant Unit 1 Technical Specification (TS) 3.7.10, "Control Room Emergency Ventilation System (CREVS)," along with the addition of new TS 5.5.17, "Control Room Habitability Program." The proposed revisions were based on Technical Specification Task Force (TSTF) 448, Revision 3, "Control Room Habitability." Provided below are responses to the questions / request contained in the NRC's RAI.

1. In AmerenUE letter dated January 14, 2008 (ULNRC-05463) on page 4 of 6 of attachment 1, the last paragraph of section 2.2.1 states, in part, that "... in TS 3.7.10, TS 5.5.17 and TS Bases 3.7.10 the phrase 'control room envelope (CRE) boundary' [as recommended per TSTF-448] is replaced with 'control room envelope (CRE) and control building envelope (CBE) boundaries' where appropriate. The CRE and CBE boundaries are addressed together or separately, as applicable." However, within insert 5.5.17, in section 5.5.17.d and 5.5.17.f, "control room" is used instead of "control room envelope (CRE) and control building envelope (CBE) boundaries." This usage is not consistent with the explanation on page 4 of 6 in section 2.2.1 of attachment 1. In addition, it is not consistent with the intent of TSTF-448 Revision 3, as indicated in the technical analysis section on page 9 where Bases Changes are discussed. On page 9 it is stated that "[t]he Bases are revised to use the terms 'control room envelope (CRE)' and 'CRE boundary' instead of the ambiguous term 'control room.' The definition of 'control room' and 'control room envelope boundary' are added to the background section of the Bases." Therefore, please clarify your intent with the use of "control room" in insert 5.5.17 (section 5.5.17.d and 5.5.17.f) of your submittal (i.e. attachment 2 to ULNRC-05463).

AmerenUE Response

The use of the term "control room" in proposed TS sections 5.5.17.d, 5.5.17.e, and 5.5.17.f. is based on the unique design of the Callaway Plant Unit 1 control room envelope (CRE) and the current TS testing protocol. The Callaway Plant CRE encompasses both the control room and Class 1E air-conditioning equipment rooms. Current TS Surveillance Requirement (SR) 3.7.10.4 requires the performance of a positive pressure test, with respect to the outside atmosphere, to verify proper functioning of the Control Room Emergency Ventilation System (CREVS). This test measures for positive pressure only in the control room and not the Class 1E air-conditioning equipment rooms which is part of the CRE. Review of TSTF-448, Revision 3, page 8, indicates that the Control Room Envelope Habitability Program requires measuring differential pressure between the CRE and adjacent areas every [18] months on a STAGGERED TEST BASIS in a manner similar to the current requirements in the TSs. Therefore, TS 5.5.17.d would be considered to be met with the current testing protocol that measures positive pressure only in the control room,

based on the TS 5.5.17.d wording that states: "Measurement, at designated locations, of the . . . . ." Based on the above discussion AmerenUE is revising the term "control room" to "CRE" in proposed TS Sections 5.5.17.d, 5.5.17.e, and 5.5.17.f, to be consistent with the intent of TSTF-448.

Revised marked-up TS pages are provided in Attachment 2.

2. Regarding the title of Insert 5.5.17, in accordance with TSTF-448 the title of the program represented by section 5.5.17 should be "Control Room Envelope Habitability Program," instead of "Control Room Habitability Program." The difference is minor; however, the title in the TSTF more appropriately places emphasis on the control room envelope. We are requesting that the licensee change the name of the program to be consistent with the TSTF.

AmerenUE Response

Consistent with the response to question 1 above, AmerenUE is revising "Control Room Habitability Program" to "Control Room Envelope Habitability Program." This will also require revising the proposed changes to SR 3.7.1 0.4 and associated TS Bases.

Revised marked-up TS pages are provided in Attachment 2. Revised marked-up TS Bases pages are provided in Attachment 4.

3. Section 5.5.17.e of your submittal is also inconsistent with TSTF-448, Rev. 3, in that there is no discussion of CRE occupants' exposure to hazardous chemicals such as is reflected in the REQUIRED ACTION of TS 3.7.10.B.2, where there is assurance that the CRE occupants are protected from hazardous chemicals regardless of quantities stored on site now or in the future. The NRC staff is aware of the discussion provided in section 2.2.3 of attachment 1 of the licensee's submittal and believes that discussion does not adequately address the intent of TSTF-448. Therefore we are requesting that you update section 5.5.17.e of your submittal to address CRE occupants' exposure to hazardous chemicals consistent with the intent of TSTF-448 Rev. 3, section 5.5.17.e.

AmerenUE Response

AmerenUE proposed to eliminate the TSTF-448, Revision 3, phrase from TS Section 5.5.17.e regarding unfiltered air inleakage limits for hazardous chemicals and CRE occupants' exposure to hazardous chemicals based, on the licensing basis not requiring quantitative limits for hazardous chemicals.

Nevertheless, AmerenUE agrees to incorporate the TSTF-448, Revision 3 wording, "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." While we are agreeing to incorporate this wording, it is recognized that this program requirement is satisfied in that hazardous chemicals are not stored or used onsite in quantities sufficient to necessitate CRE protection as required by Regulatory Guide 1.78, Rev. 0. The proposed wording to the TS 3.7.10 Bases (in letter ULNRC-05463) provides clarifying information regarding this program requirement.

Revised marked-up TS pages are provided in Attachment 2.

Additional Proposed TS Change

By letter dated July 3, 2008 (Accession Number ML081850420) the TSTF submitted TSTF-508, Revision 0, "Revise Control Room Habitability Actions to Address Lessons Learned from TSTF-448 Implementation," to the NRC. TSTF-508 included a proposed change to NUREG-1431, "Standard Technical Specifications Westinghouse Plants," Specification 5.5.17, paragraph d, in which the last sentence of this paragraph is changed from "The results shall be trended and used as part of the [18] month assessment of the CRE boundary" to "The results shall be trended and used as part of the periodic assessment of the CRE boundary."

The Technical Analysis in TSTF-508 supporting this change, states:

> In order to be consistent with paragraph c of the Control Room Envelope Habitability Program, the last sentence of paragraph d is revised to use the term "periodic" in lieu of the bracketed phrase "18 month." The model TS indicates that periodic CRE relative pressure measurements shall "be trended and used as part of the [18 month] assessment of the CRE boundary." However, the only periodic assessment required by the TSTF-448 model TS occurs at intervals specified in Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Section C.1, as specified by paragraph c. This assessment is normally performed every 36 months, but the 36-month frequency appears only in the Regulatory Guide and does not appear in the TS. In discussions between the NRC and the TSTF, it was determined that the inclusion of the phrase "18-months" in this sentence was an error. Therefore, to be consistent with the remainder of the program, the bracketed phrase "[18 months]" is replaced with the word "periodic." This substitution resolves the inconsistency between these two requirements in a manner consistent with the published regulatory guidance.

AmerenUE is revising the proposed change to TS 5.5.17.d to state, "The results shall be trended and used as part of the periodic assessment of the CRE boundary." This change is being proposed consistent with TSTF-508 to prevent unnecessary additional assessments of the CRE boundary and for consistency with regulatory guidance. Other changes proposed in TSTF-508 may be pursued subsequent to NRC staff approval of TSTF-508.

Marked-up TS pages are provided in Attachment 2. As noted in the cover letter, these mark-up TS pages supersede the mark-up TS pages originally provided in AmerenUE's January 14, 2008 license amendment request.

Enclosure
to ULNRC-05578

REVISED PROPOSED TECHNICAL SPECIFICATION CHANGES (MARK-UP)

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	~~Verify one CREVS train can maintain a positive pressure of ≥ 0.125 inches water gauge, relative to the outside atmosphere during the CRVIS mode of operation.~~ Perform required unfiltered air inleakage testing of the CRE and CBE boundaries in accordance with the Control Room Envelope Habitability Program.	~~18 months on a STAGGERED TEST BASIS~~ In accordance with the Control Room Envelope Habitability Program

Insert 5.5.17

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 inleakage 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 inleakage 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.

Insert 5.5.17 Continued

e. The quantitative limits on unfiltered air inleakage into CRE and CBE. 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 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 inleakage, and measuring CRE pressure and assessing CRE and CBE as required by paragraphs c and d, respectively.

Enclosure
to ULNRC-05578

REVISED (CLEAN) TECHNICAL SPECIFICATION PAGES

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

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 inleakage 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 inleakage 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 Habitability Program (continued)

e. The quantitative limits on unfiltered air inleakage into CRE and CBE. 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 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 inleakage, and measuring CRE pressure and assessing CRE and CBE as required by paragraphs c and d, respectively.

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REVISED PROPOSED TECHNICAL SPECIFICATION BASES CHANGES
(For Information Only)

Insert B 3.7.10 BKG 1

A single CREVS train will pressurize the CRE to about 0.125 inches water gauge relative to the outside environment. The 0.125 inches water gauge positive pressure is obtained based on a nominal flowrate of 2000 cfm through the filtration filter, which includes 400 cfm of control building envelope (CBE) air.

Insert B 3.7.10 BKG 2

By operation of the control room pressurization trains and the control room filtration units, the CREVS pressurizes, recirculates and filters air within the CRE as well as the CBE that generally surrounds the CRE. The boundaries of these two distinct but related volumes are credited in the analysis of record for limiting the inleakage of unfiltered outside air.

The plant CRE design is unique. The Control Building by and large surrounds the CRE. The Control Building is also designed to be at a positive pressure with respect to its surrounding environment although not positive with respect to the CRE. In the emergency pressurization and filtration mode, the control room air volume receives air through a filtration system that takes suction on the Control Building. The Control Building in turn receives filtered air from the outside environment.

The CRE is the area within the confines of the CRE boundary that contains the spaces that CRE 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 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 CBE is an area that largely surrounds the CRE. Occupancy of the CBE is not required to control the unit during normal and accident conditions. The CBE boundary is the combination of walls, floor, roof, ducting, doors, penetrations and equipment that physically form the CBE. The CBE boundary must be maintained to ensure that the inleakage of unfiltered air into the CBE will not exceed the inleakage assumed in the licensing basis analysis of DBA consequences to CRE occupants. The CBE and its boundary are defined in the Control Room Envelope Habitability Program.