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FPL Energy
Duane Arnold Energy Center

June 29, 2007

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10 CFR 50.90

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

Duane Arnold Energy Center
Docket 50-331
License No. DPR-49

Technical Specification Change Request (TSCR-092): Consolidated Line Item Improvement; Adoption of Changes to Standard Technical Specifications Under Technical Specifications Task Force (TSTF) Change Number TSTF–448, Revision 3 Regarding Control Room Envelope Habitability
Affected Technical Specifications: Section 3.7.4 and 5.5.13

Pursuant to 10 CFR 50.90, FPL Energy Duane Arnold, LLC (FPL Energy Duane Arnold) hereby requests revision to the Technical Specifications (TS) for the Duane Arnold Energy Center (DAEC).

The proposed amendment consists of a Consolidated Line Item Improvement that adopts changes to TS section 3.7.4, Standby Filter Unit (SFU) System, and adds Technical Specification section 5.5.13, Control Building Envelope Habitability Program, consistent with Technical Specifications Task Force (TSTF) Change Traveler TSTF-448, Revision 3.

The proposed Amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c). Associated TS Bases changes will be completed per the TS Bases Control Program (TS 5.5.10).

FPL Energy Duane Arnold requests an implementation period of 180 days after issuance of the license amendment.

This application has been reviewed by the DAEC Company Nuclear Review Board. A copy of this submittal, along with the 10 CFR 50.92 evaluation of "No Significant Hazards Consideration," is being forwarded to our appointed state official pursuant to 10 CFR 50.91.

Commitments made in this submittal are listed in Section 3.2 of Enclosure A. The following commitment made in our January 28, 2005 letter (ML050390308) is closed by this letter.

> DAEC commits to submit to the NRC proposed changes to the Technical Specifications (and any associated plant modifications) based upon the final, approved version of Technical Specification Task Force (TSTF) - 448, adjusted, as needed, to account for plant-specific DAEC Control Room Envelope design and licensing basis, within 180 days following NRC approval of TSTF-448.

If you have any questions or require additional information, please contact Steve Catron at (319) 851-7234.

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

Executed on June 29, 2007.

Gary Van Middlesworth
Site Vice President, Duane Arnold Energy Center
FPL Energy Duane Arnold, LLC

Enclosures: A) Evaluation of Proposed Change
B) Proposed Technical Specification and Bases Changes (Mark-Up)
C) Proposed Technical Specification Pages (Re-Typed)

cc: Administrator, Region III, USNRC
Project Manager, DAEC, USNRC
Resident Inspector, DAEC, USNRC
D. McGhee (State of Iowa)

ENCLOSURE A

EVALUATION OF PROPOSED CHANGE

Subject: Consolidated Line Item Improvement; Adoption of Changes to Standard Technical Specifications Under Technical Specifications Task Force (TSTF) Change Number TSTF–448, Revision 3 Regarding Control Room Envelope Habitability

1.0 DESCRIPTION

2.0 ASSESSMENT

3.0 REGULATORY ANALYSIS

4.0 ENVIRONMENTAL EVALUATION

3 Pages Follow

ENCLOSURE A

Consolidated Line Item Improvement; Adoption of Changes to Standard Technical Specifications Under Technical Specifications Task Force (TSTF) Change Number TSTF–448, Revision 3 Regarding Control Room Envelope Habitability

1.0 DESCRIPTION

The proposed amendment would modify Technical Specification (TS) requirements related to control building envelope habitability in TS 3.7.4, Standby Filter Units (SFU) System and TS Section 5.5, Administrative Controls—Programs. The changes are consistent with Nuclear Regulatory Commission (NRC) approved Industry/TSTF Standard Technical Specifications (STS) change TSTF–448 Revision 3. The availability of this TS improvement was published in the Federal Register on January 17, 2007 as part of the consolidated line item improvement process (CLIIP).

2.0 ASSESSMENT

2.1 Applicability of Published Safety Evaluation

FPL Energy Duane Arnold has reviewed the safety evaluation dated January 9, 2007 as part of the CLIIP. This review included a review of the NRC staff's evaluation, as well as the supporting information provided to support TSTF–448. FPL Energy Duane Arnold has concluded that the justifications presented in the TSTF proposal and the safety evaluation prepared by the NRC staff are applicable to the Duane Arnold Energy Center (DAEC) and justify this amendment for the incorporation of the changes to the DAEC TS.

2.2 Optional Changes and Variations

FPL Energy Duane Arnold is not proposing any variations or deviations from the TS changes described in the TSTF–448, Revision 3, or the applicable parts of the NRC staff's model safety evaluation dated January 9, 2007 with the following exceptions:

References to chemical and smoke hazards have been deleted from Technical Specification 3.7.4, Required Action B.2 and Technical Specification 5.5.13, as well as the associated Bases sections. This is being done since the SFU system at the DAEC is not designed to protect Control Building occupants from these hazards. The DAEC Updated Final Safety Analysis Report (UFSAR) Section 6.4 specifies that surveys of hazardous chemicals have been performed and found to not pose a threat to Control Building habitability. No toxic gas detectors are provided to initiate Control Building isolation. Additionally, as part of the FPL Energy Duane Arnold Generic Letter 2003-01 response dated January 28, 2005 (ML050390308), an Engineering Evaluation was performed for chemical hazards. The purpose of the evaluation was to perform a screening of potential toxic chemical releases to identify those that may require further analysis for Control Building habitability and to perform that analysis. A qualitative

assessment of the effect on Control Building habitability for internal or external smoke events was also performed. The hazardous chemical evaluation found that there are no on-site or off-site stationary or mobile hazardous chemical sources that threaten Control Building habitability. The smoke assessment concluded that no items were identified that would impede habitability or prevent operation of the remote shutdown panels and controls for a fire/smoke event originating in the Control Building Envelope (i.e., Heating, Ventilation, and Air Conditioning (HVAC) Equipment Room, Control Room or Cable Spreading Room).

The wording of the new Technical Specification 5.5.13.d has been changed to specify that the Control Building Envelope pressure is measured relative to the outside atmosphere instead of all external areas adjacent to the Control Building Envelope boundary. This is being done to reflect the current design and licensing basis of the DAEC. The current wording of Technical Specification Surveillance Requirement 3.7.4.4 specifies that pressure is measured relative to the outside atmosphere. The pressure measurement required to be performed in the new Technical Specification 5.5.13.d is intended to perform the same measurement as the current Surveillance Requirement 3.7.4.4, using the existing installed instrumentation. Appropriate Bases changes have also been performed.

Evaluations 1, 5 and 6 of the safety evaluation dated January 9, 2007 are applicable to the DAEC.

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

FPL Energy Duane Arnold proposes the following as a license condition to support implementation of the proposed TS changes: "Upon implementation of Amendment No. xxx adopting TSTF–448, Revision 3, the determination of control building envelope (CBE) unfiltered air inleakage as required by SR 3.7.4.4, in accordance with TS 5.5.13.c.(i), the assessment of CBE habitability as required by Specification 5.5.13.c.(ii), and the measurement of CBE pressure as required by Specification 5.5.13.d, shall be considered met. Following implementation:

(a) The first performance of SR 3.7.4.4, in accordance with Specification 5.5.13.c.(i), shall be within the specified Frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from September 21, 2004, the date of the most recent successful tracer gas test.

(b) The first performance of the periodic assessment of CBE habitability, Specification 5.5.13.c.(ii), shall be within 3 years, plus the 9-month allowance of SR 3.0.2, as measured from September 21, 2004, the date of the most recent successful tracer gas test.

(c) The first performance of the periodic measurement of CBE pressure, Specification 5.5.13.d, shall be within 24 months, plus the 180 days

allowed by SR 3.0.2, as measured from February 24, 2006, the date of the most recent successful pressure measurement test."

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration Determination

FPL Energy Duane Arnold has reviewed the proposed no significant hazards consideration determination (NSHCD) published in the Federal Register as part of the CLIIP. FPL Energy Duane Arnold has concluded that the proposed NSHCD presented in the Federal Register notice is applicable to DAEC and is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

3.2 Commitments

(a) The first performance of SR 3.7.4.4, in accordance with Specification 5.5.13.c.(i), shall be within the specified Frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from September 21, 2004, the date of the most recent successful tracer gas test.

(b) The first performance of the periodic assessment of CBE habitability, Specification 5.5.13.c.(ii), shall be within 3 years, plus the 9-month allowance of SR 3.0.2, as measured from September 21, 2004, the date of the most recent successful tracer gas test.

(c) The first performance of the periodic measurement of CBE pressure, Specification 5.5.13.d, shall be within 24 months, plus the 180 days allowed by SR 3.0.2, as measured from February 24, 2006, the date of the most recent successful pressure measurement test.

4.0 ENVIRONMENTAL EVALUATION

FPL Energy Duane Arnold has reviewed the environmental evaluation included in the model safety evaluation dated January 9, 2007 as part of the CLIIP. FPL Energy Duane Arnold has concluded that the staff's findings presented in that evaluation are applicable to the DAEC and the evaluation is hereby incorporated by reference for this application.

ENCLOSURE B

PROPOSED TECHNICAL SPECIFICATION

AND

BASES CHANGES

(MARK-UP)

17 Pages Follow

3.7 PLANT SYSTEMS

3.7.4 Standby Filter Unit (SFU) System

LCO 3.7.4 Two SFU subsystems shall be OPERABLE.

---NOTE---
The control building *envelope* boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, and 3,
During movement of irradiated fuel assemblies in the secondary containment,
During CORE ALTERATIONS,
During Operations with a Potential for Draining the Reactor Vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SFU subsystem inoperable *for reasons other than Condition B.*	A.1 Restore SFU subsystem to OPERABLE status.	7 days
B. ~~Two~~ *One or more* SFU subsystems inoperable due to inoperable control building *envelope* boundary in MODES 1, 2, and 3.	*B.1 Initiate actions to implement mitigating actions.* *AND* *B.2 Verify mitigating actions ensure control building envelope occupant exposures to radiological hazards will not exceed limits.* *AND* B.~~1~~*3* Restore control building *envelope* boundary to OPERABLE status.	*Immediately* *24 hours* ~~24 hours~~ *90 days*

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	12 hours 36 hours
D. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.	----------NOTE---------- LCO 3.0.3 is not applicable. ---------- D.1 Place OPERABLE SFU subsystem in the isolation mode. OR D.2.1 Suspend movement of irradiated fuel assemblies in the secondary containment. AND D.2.2 Suspend CORE ALTERATIONS. AND D.2.3 Initiate action to suspend OPDRVs.	 Immediately Immediately Immediately Immediately
E. Both SFU subsystems inoperable in MODE 1, 2, or 3 for reasons other than Condition B.	E.1 Enter LCO 3.0.3.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Both SFU subsystems inoperable during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs. *OR* *One or more SFU subsystems inoperable due to an inoperable control building envelope boundary during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.*	----------NOTE---------- LCO 3.0.3 is not applicable. ---------- F.1 Suspend movement of irradiated fuel assemblies in the secondary containment. AND F.2 Suspend CORE ALTERATIONS. AND F.3 Initiate action to suspend OPDRVs.	 Immediately Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Operate each SFU subsystem for ≥ 15 minutes.	31 days
SR 3.7.4.2	Perform required SFU filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.4.3	Verify each SFU subsystem actuates on an actual or simulated initiation signal.	24 months
SR 3.7.4.4	*Perform required Control Building Envelope unfiltered air inleakage testing in accordance with the Control Building Envelope Habitability Program.* ~~Verify each SFU subsystem can maintain a positive pressure of ≥ 0.1 inches water gauge relative to the outside atmosphere during the isolation mode of operation at a flow rate of 1000 cfm ± 10%.~~	*In accordance with the Control Building Envelope Habitability Program* ~~24 months on a STAGGERED TEST BASIS~~

5.5 Programs and Manuals

5.5.12 Primary Containment Leakage Rate Testing Program (continued)

The first Type A test after the September 1993 Type A test shall be performed no later than September 2008.

The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a, is 45.7 psig.

The maximum allowable primary containment leakage rate, L_a, at P_a, shall be 2.0% of primary containment air weight per day.

Leakage Rate acceptance criteria are:

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

b. The air lock testing acceptance criterion is overall air lock leakage rate $\leq 0.05\ L_a$ when tested at $\geq P_a$.

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

5.5.13 Control Building Envelope Habitability Program

A Control Building Envelope (CBE) Habitability Program shall be established and implemented to ensure that CBE habitability is maintained such that, with an OPERABLE Standby Filter Unit System, CBE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CBE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of 5 rem total effective dose equivalent (TEDE) for the duration of the accident. The program shall include the following elements:

a. The definition of the CBE and the CBE boundary.

b. Requirements for maintaining the CBE boundary in its design condition including configuration control and preventive maintenance.

5.5 Programs and Manuals

5.5.13 Control Building Envelope Habitability Program (continued)

c. Requirements for (i) determining the unfiltered air inleakage past the CBE boundary into the CBE 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 CBE habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.

d. Measurement, at designated locations, of the CBE pressure relative to the outside atmosphere during the pressurization mode of operation by one subsystem of the SFU System, operating at the flow rate required by the VFTP, at a Frequency of 24 months on a STAGGERED TEST BASIS. The results shall be trended and used as part of the 24 month assessment of the CBE boundary.

e. The quantitative limits on unfiltered air inleakage into the 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.

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

B 3.7 PLANT SYSTEMS

B 3.7.4 Standby Filter Unit (SFU) System

BASES

BACKGROUND

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

The safety related function of the SFU System includes two independent and redundant high efficiency air filtration subsystems for emergency treatment of outside supply air *and a Control Building Envelope (CBE) boundary that limits the inleakage of unfiltered air.* Each *SFU* subsystem consists of a demister, an electric heater, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section, a second HEPA filter, a fan, and the associated *ductwork, valves or dampers, doors, barriers, and instrumentation* ~~ductwork and dampers~~. Demisters remove water droplets from the airstream. HEPA filters remove particulate matter, which may be radioactive. The charcoal adsorbers provide a holdup period for gaseous iodine, allowing time for decay.

The CBE is the area within the confines of the CBE boundary that contains the spaces that control building occupants inhabit to control the unit during normal and accident conditions. This area encompasses the control building, 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 CBE is protected during normal operation, natural events, and accident conditions. The CBE boundary is the combination of walls, floor, roof, ducting, doors, penetrations and equipment that physically form the CBE. The OPERABILITY of 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 design basis accident (DBA) consequences to CBE occupants. The CBE and its boundary are defined in the Control Building Envelope Habitability Program.

BASES

BACKGROUND (continued)

The SFU System is a standby system, parts of which also operate during normal unit operations to maintain the *CBE* ~~control room environment~~. Upon receipt of the initiation signal (indicative of conditions that could result in radiation exposure to *CBE occupants* ~~control room personnel~~), the SFU System automatically starts and a system of dampers isolates the *CBE* ~~control building~~ to *minimize* ~~prevent~~ infiltration of contaminated air into the *CBE* ~~control room~~. Outside air is taken in at the normal ventilation intake and is passed through one of the charcoal adsorber filter subsystems for removal of airborne radioactive particles before being mixed with the recirculated air. The air (outside and/or recirculated) is cooled by Air Conditioning (AC) units supplied by the Control Building Chillers (CBCs). The SFUs and AC units share common ductwork such that either SFU may supply outside air to either AC unit. However, the CBCs and AC units are addressed as part of LCO 3.7.5, "Control Building Chiller System."

The SFU System is designed to maintain *a habitable environment in the CBE* ~~the control room environment~~ for a 30 day continuous occupancy after a DBA without exceeding 5 rem total effective dose equivalent (TEDE). A single SFU subsystem *operating at a flow rate of 1000 cfm ±10%* will pressurize the *CBE* ~~control room~~ to ≥ 0.1 inches water gauge pressure above atmospheric pressure, under calm wind conditions (i.e. less than 5 mph wind speed) *relative to the outside atmosphere*. This will *minimize* ~~prevent~~ infiltration of air from *the outside atmosphere* ~~surrounding buildings~~.

Other areas in the *CBE* ~~control building~~ that directly communicate with the *CBE* ~~control room~~ via HVAC system ductwork or doors are also required to maintain a positive pressure relative to the adjacent areas outside the *CBE* ~~control building~~. This will assure that leakage is from the *CBE* ~~control building~~ to the adjacent areas or outdoors. SFU System operation in maintaining *a habitable environment in the CBE* ~~control room habitability~~ is discussed in the UFSAR, Sections 6.4 and 9.4.4, (Refs. 1 and 2, respectively).

(continued)

BASES

APPLICABLE SAFETY ANALYSES

The ability of the SFU System to maintain the habitability of the *CBE* ~~control room~~ is an explicit assumption for the safety analyses presented in the UFSAR, Sections 6.4 and 15.2 (Refs. 1 and 3, respectively). The SFU System is assumed to operate in the isolation mode following a *DBA* ~~loss-of-coolant accident, fuel handling accident, main steam line break, and control rod drop accident~~. The radiological doses to *the CBE occupants* ~~control room personnel~~ as a result of the various DBAs are summarized in Reference 3. No single active failure will cause the loss of CBE ~~control room~~ habitability.

The SFU System satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Two redundant subsystems of the SFU System are required to be OPERABLE to ensure that at least one is available, ~~assuming~~ *if* a single *active* failure disables the other subsystem. Total *SFU S*system failure, *such as from a loss of both ventilation subsystems or from an inoperable CBE boundary,* could result in exceeding a dose of 5 rem *TEDE to the CBE occupants* ~~to the control room operators~~ in the event of a DBA.

~~The~~ *Each* SFU *subsystem* ~~System~~ is considered OPERABLE when the individual components necessary to *limit CBE occupant exposure* ~~control operator exposure~~ are OPERABLE ~~in both subsystems~~. A subsystem is considered OPERABLE when its associated:

a. Fan is OPERABLE;

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

c. Heater, demister, ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

(continued)

BASES

LCO (continued)

~~In addition, the control room boundary must be maintained in a condition sufficiently leak-tight such that the pressurization limit of SR 3.7.4.4 can be met. However, it is acceptable for access doors to be open for normal control room entry and exit and not consider it to be a failure to meet the LCO.~~

In order for the SFU subsystems to be considered OPERABLE, the CBE boundary must be maintained such that the CBE occupant dose from a large radioactive release does not exceed the calculated dose in the licensing basis consequence analyses for DBAs.

The LCO is modified by a Note allowing the *CBE* ~~control building~~ boundary to be opened intermittently under administrative controls. *This Note only applies to openings in the CBE boundary that can be rapidly restored to the design condition, such as doors, hatches, floor plugs, and access panels.* For entry and exit through the doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings these controls *should be proceduralized and* consist of stationing a dedicated individual at the opening who is in continuous communication with the *operators in the CBE* ~~control room~~. This individual will have a method to rapidly close the opening *and to restore the CBE boundary to a condition equivalent to the design condition* when a need for CBE ~~control building~~ isolation is indicated.

APPLICABILITY

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

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

a. During Operations with *a* Potential for Draining the Reactor Vessel (OPDRVs);

(continued)

BASES

APPLICABILITY (continued)

b. During CORE ALTERATIONS; and

c. During movement of irradiated fuel assemblies in the secondary containment.

ACTIONS

A.1

With one SFU subsystem inoperable, *for reasons other than an inoperable CBE boundary,* the inoperable SFU subsystem must be restored to OPERABLE status within 7 days. With the unit in this condition, the remaining OPERABLE SFU subsystem is adequate to perform *the CBE occupant* ~~control room radiation~~ protection *function*. However, the overall reliability is reduced because a ~~single~~ failure in the OPERABLE subsystem could result in *loss of the* ~~reduced~~ SFU System *function* ~~capability~~. The 7 day Completion Time is based on the low probability of a DBA occurring during this time period, and that the remaining subsystem can provide the required capabilities.

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

If the unfiltered inleakage of potentially contaminated air past the CBE boundary and into the CBE can result in CBE occupant radiological dose greater than the calculated dose of the licensing basis analyses of DBA consequences (allowed to be up to 5 rem TEDE), the CBE boundary is inoperable. Actions must be taken to restore an OPERABLE CBE boundary within 90 days.

During the period that the CBE boundary is considered inoperable, action must be initiated to implement mitigating actions to lessen the effect on CBE occupants from the potential hazards of a radiological event. Actions must be taken within 24 hours to verify that in the event of a DBA, the mitigating actions will ensure that CBE occupant radiological exposures will not exceed the calculated dose of the licensing basis analyses of DBA consequences. These mitigating actions (i.e., actions that are

(continued)

BASES

ACTIONS (continued)

taken to offset the consequences of the inoperable CBE boundary) should be preplanned for implementation upon entry into the condition, regardless of whether entry is intentional or unintentional. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions. The 90 day Completion Time is reasonable based on the determination that the mitigating actions will ensure protection of CBE occupants within analyzed limits while limiting the probability that CBE occupants will have to implement protective measures that may adversely affect their ability to control the reactor and maintain it in a safe shutdown condition in the event of a DBA. In addition, the 90 day Completion Time is a reasonable time to diagnose, plan and possibly repair, and test most problems with the CBE boundary.

~~If the main control building boundary is inoperable in MODES 1, 2, and 3, the SFU trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE control building boundary within 24 hours. During the period that the control building boundary is inoperable, appropriate compensatory measures (consistent with the intent of GDC 19) should be utilized to protect control room operators from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and to ensure physical security. Preplanned measures should be available to address these concerns for intentional and unintentional entry into the condition. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of compensatory measures. The 24 hour Completion Time is a typically reasonable time to diagnose, plan and possibly repair, and test most problems with the control building boundary.~~

C.1 and C.2

In MODE 1, 2, or 3, if the inoperable SFU subsystem or *the CBE* ~~control building~~ boundary cannot be restored to OPERABLE status within the ~~associated~~ *required* Completion Time, the unit must be placed in a MODE that minimizes *accident* risk. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours and in MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit

(continued)

BASES

ACTIONS (continued)

conditions from full power conditions in an orderly manner and without challenging unit systems.

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

LCO 3.0.3 is not applicable in MODE 4 or 5. However, since irradiated fuel assembly movement can occur in MODE 1, 2, or 3, the Required Actions of Condition D are modified by a Note indicating that LCO 3.0.3 does not apply. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, inability to suspend movement of irradiated fuel assemblies is not sufficient reason to require a reactor shutdown.

During movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs, if the inoperable SFU subsystem cannot be restored to OPERABLE status within the required Completion Time, the OPERABLE SFU subsystem may be placed in the isolation mode (i.e., one SFU subsystem in operation with the control building isolated). This action ensures that the remaining subsystem is OPERABLE, that no failures that would prevent automatic actuation will occur, and that any active failure will be readily detected.

An alternative to Required Action D.1 is to immediately suspend activities that present a potential for releasing radioactivity that might require isolation of the *CBE* ~~control room~~. This places the unit in a condition that minimizes *the accident* risk.

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

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BASES

ACTIONS
(continued)

E.1

If both SFU subsystems are inoperable in MODE 1, 2, or 3 for reasons other than an inoperable *CBE* ~~control building~~ boundary (i.e., Condition B), the SFU System may not be capable of performing the intended function and the unit is in a condition outside *of* the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.

F.1, F.2, and F.3

LCO 3.0.3 is not applicable in MODE 4 or 5. However, since irradiated fuel assembly movement can occur in MODE 1, 2, or 3, the Required Actions of Condition F are modified by a Note indicating that LCO 3.0.3 does not apply. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, inability to suspend movement of irradiated fuel assemblies is not sufficient reason to require a reactor shutdown.

During movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs, with two SFU subsystems inoperable, *or with one or more SFU subsystems inoperable due to an inoperable CBE boundary*, action must be taken immediately to suspend activities that present a potential for releasing radioactivity that might require isolation of the *CBE* ~~control room~~. This places the unit in a condition that minimizes *the accident* risk.

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

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.4.1

Operating each SFU subsystem for ≥ 15 minutes ensures that both subsystems are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage or fan or motor failure, can be detected for corrective action. Since the SFU charcoal is tested at a Relative Humidity ≥ 95%, extended operation of the electric heaters is not required. Thus, each subsystem need only be operated for ≥ 15 minutes to demonstrate the function of each subsystem. The function of the SFU electric heaters is to pre-heat incoming air to above 40°F to ensure adsorption occurs within the temperature range that charcoal testing is performed. The 31 day Frequency was developed in consideration of the known reliability of fan motors and controls and the redundancy available in the system.

SR 3.7.4.2

This SR verifies that the required SFU testing is performed in *accordance with the Ventilation Filter Testing Program (VFTP).* The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test *F*frequencies and additional information are discussed in detail in the VFTP.

SR 3.7.4.3

This SR verifies that on an actual or simulated initiation signal, each SFU subsystem starts and operates. This SR also ensures that the control *building* ~~room~~ isolates. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.7.1, "Standby Filter Unit Instrumentation," overlaps this SR to provide complete testing of the safety function. While this Surveillance can be performed with the reactor at power, operating experience has shown that these components usually pass the Surveillance when performed at the 24 month Frequency. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

SR 3.7.4.4

~~This SR verifies the integrity of the control room enclosure and the assumed inleakage rates of potentially contaminated air. The control room positive pressure, with respect to potentially contaminated adjacent areas, is periodically tested to verify proper function of the SFU System. During the emergency mode of operation, the SFU System is designed to slightly pressurize the control room ≥ 0.1 inches water gauge above atmospheric~~

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~pressure, under calm wind conditions (i.e. less than 5 mph wind speed) to prevent unfiltered inleakage. The SFU System is designed to maintain this positive pressure at a flow rate of 1000 cfm ± 10% to the control room in the isolation mode. The Frequency of 24 months on a STAGGERED TEST BASIS is consistent with industry practice and other filtration systems SRs~~.

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

The CBE is considered habitable when the radiological dose to CBE occupants calculated in the licensing basis analyses of DBA consequences is no more than 5 rem TEDE. This SR verifies that the unfiltered air inleakage into the CBE is no greater than the flow rate assumed in the licensing basis analyses of DBA consequences. When unfiltered air inleakage is greater than the assumed flow rate, Condition B must be entered. Required Action B.3 allows time to restore the CBE boundary to OPERABLE status provided mitigating actions can ensure that the CBE remains within the licensing basis habitability limits for the occupants following an accident. Compensatory measures are discussed in Regulatory Guide 1.196, Section C.2.7.3, (Ref. 4) which endorses, with exceptions, NEI 99-03, Section 8.4 and Appendix F (Ref. 5). These compensatory measures may also be used as mitigating actions as required by Required Action B.2. Temporary analytical methods may also be used as compensatory measures to restore OPERABILITY (Ref. 6). Options for restoring the CBE boundary to OPERABLE status include changing the licensing basis DBA consequence analysis, repairing the CBE boundary, or a combination of these actions. Depending upon the nature of the problem and the corrective action, a full scope inleakage test may not be necessary to establish that the CBE boundary has been restored to OPERABLE status.

BASES

REFERENCES

1. UFSAR, Section 6.4.

2. UFSAR, Section 9.4.4.

3. UFSAR, Section 15.2.

4. *Regulatory Guide 1.196.*

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

6. *Letter from Eric J. Leeds (NRC) to James W. Davis (NEI) dated January 30, 2004, "NEI Draft White Paper, Use of Generic Letter 91-18 Process and Alternative Source Terms in the Context of Control Room Habitability." (ADAMS Accession No. ML040300694).*

ENCLOSURE C

PROPOSED TECHNICAL SPECIFICATION PAGES

(RE-TYPED)

6 Pages Follow

3.7 PLANT SYSTEMS

3.7.4 Standby Filter Unit (SFU) System

LCO 3.7.4 Two SFU subsystems shall be OPERABLE.

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

APPLICABILITY: MODES 1, 2, and 3,
During movement of irradiated fuel assemblies in the secondary containment,
During CORE ALTERATIONS,
During Operations with a Potential for Draining the Reactor Vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SFU subsystem inoperable for reasons other than Condition B.	A.1 Restore SFU subsystem to OPERABLE status.	7 days
B. One or more SFU subsystems inoperable due to inoperable control building envelope boundary in MODES 1, 2, and 3.	B.1 Initiate actions to implement mitigating actions. AND B.2 Verify mitigating actions ensure control building envelope occupant exposures to radiological hazards will not exceed limits. AND B.3 Restore control building envelope boundary to OPERABLE status.	Immediately 24 hours 90 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	12 hours 36 hours
D. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.	----------NOTE---------- LCO 3.0.3 is not applicable. ---------- D.1 Place OPERABLE SFU subsystem in the isolation mode. OR D.2.1 Suspend movement of irradiated fuel assemblies in the secondary containment. AND D.2.2 Suspend CORE ALTERATIONS. AND D.2.3 Initiate action to suspend OPDRVs.	 Immediately Immediately Immediately Immediately
E. Both SFU subsystems inoperable in MODE 1, 2, or 3 for reasons other than Condition B.	E.1 Enter LCO 3.0.3.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Both SFU subsystems inoperable during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs. OR One or more SFU subsystems inoperable due to an inoperable control building envelope boundary during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.	----------NOTE---------- LCO 3.0.3 is not applicable. ---------- F.1 Suspend movement of irradiated fuel assemblies in the secondary containment. AND F.2 Suspend CORE ALTERATIONS. AND F.3 Initiate action to suspend OPDRVs.	 Immediately Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Operate each SFU subsystem for ≥ 15 minutes.	31 days
SR 3.7.4.2	Perform required SFU filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.4.3	Verify each SFU subsystem actuates on an actual or simulated initiation signal.	24 months
SR 3.7.4.4	Perform required Control Building Envelope unfiltered air inleakage testing in accordance with the Control Building Envelope Habitability Program.	In accordance with the Control Building Envelope Habitability Program

5.5 Programs and Manuals

5.5.13 Primary Containment Leakage Rate Testing Program (continued)

The first Type A test after the September 1993 Type A test shall be performed no later than September 2008.

The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a, is 45.7 psig.

The maximum allowable primary containment leakage rate, L_a, at P_a, shall be 2.0% of primary containment air weight per day.

Leakage Rate acceptance criteria are:

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

b. The air lock testing acceptance criterion is overall air lock leakage rate $\leq 0.05\ L_a$ when tested at $\geq P_a$.

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

5.5.13 Control Building Envelope Habitability Program

A Control Building Envelope (CBE) Habitability Program shall be established and implemented to ensure that CBE habitability is maintained such that, with an OPERABLE Standby Filter Unit System, CBE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CBE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess 5 rem total effective dose equivalent (TEDE) for the duration of the accident. The program shall include the following elements:

a. The definition of the CBE and the CBE boundary.

b. Requirements for maintaining the CBE boundary in its design condition including configuration control and preventive maintenance.

5.5 Programs and Manuals

5.5.13 Control Building Envelope Habitability Program (continued)

c. Requirements for (i) determining the unfiltered air inleakage past the CBE boundary into the CBE 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 CBE habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.

d. Measurement, at designated locations, of the CBE pressure relative to the outside atmosphere during the pressurization mode of operation by one subsystem of the SFU System, operating at the flow rate required by the VFTP, at a Frequency of 24 months on a STAGGERED TEST BASIS. The results shall be trended and used as part of the 24 month assessment of the CBE boundary.

e. The quantitative limits on unfiltered air inleakage into the 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.

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