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FPL Energy.

Duane Arnold Energy Center

May 8, 2008

NG-08-0312
10 CFR 50.90

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

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

Updated Technical Specification and Bases Pages Related to 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

References:

1. Letter, G. Van Middlesworth (FPL Energy Duane Arnold) to Document Control Desk (USNRC), "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," dated June 29, 2007, NG-07-0493 (ML072040245)
2. Letter, K. Feintuch (USNRC) to Richard L. Anderson (FPL Energy Duane Arnold), "Request for Additional Information Related to Amendment Request to Change Technical Specification Sections 3.7.4 and 5.5.13 Based on Model Text from Technical Specifications Task Force Traveler TSTF-448, Revision 3, Control Room Habitability (TAC No. MD6020)," dated December 3, 2007 (ML073201102)
3. Letter, Richard L. Anderson (FPL Energy Duane Arnold) to Document Control Desk (USNRC), Response to Request for Additional Information Related to 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," dated January 28, 2008, NG-08-0001 (ML080390536)

In Reference 1, FPL Energy Duane Arnold requested an amendment to the Duane Arnold Energy Center (DAEC) Technical Specifications (TS) consisting 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.

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By letter dated December 3, 2007, the Staff issued a request for additional information (Reference 2) regarding Reference 1. A conference call with the NRC on Reference 2 was also held on January 8, 2008. In this phone call, it was agreed that the DAEC TS should reflect the testing that was performed in the response to Generic Letter 2003-01, "Control Room Habitability." FPL Energy Duane Arnold also agreed to perform a periodic surveillance of on-site and off-site stationary and mobile hazardous chemical sources that could potentially threaten Control Building (CB) habitability. Reference 3 provided replacement marked-up TS and Bases pages, as well as replacement clean-typed TS pages, reflecting the responses to the requests of Reference 2.

In a phone call with the NRC dated March 27, 2008, the NRC expressed concerns that References 1 and 3 did not fully address the smoke and chemical hazards described in TSTF-448, Revision 3. FPL Energy Duane Arnold agreed to review and update the TS and Bases pages in the Reference 1 and 3 submittals.

Enclosure 1 to this letter provides replacement marked-up TS and Bases pages and Enclosure 2 provides the clean-typed TS pages, reflecting the changes discussed in the phone call dated March 27, 2008. These pages supersede their corresponding pages in References 1 and 3.

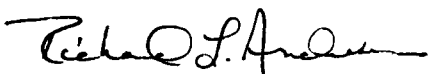
This letter does not alter the evaluation or conclusions of Reference 1. The proposed Amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c). Associated TS Bases changes will be completed per the TS Bases Control Program (TS 5.5.10).

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

A copy of this submittal is being forwarded to our appointed state official pursuant to 10 CFR 50.91.

Commitments made in References 1 and 3 remain valid and are not changed by this submittal. If you have any questions, please contact Steve Catron at (319) 851-7234.

I declare under penalty of perjury that the foregoing is true and correct. Executed on May 8, 2008.



Richard L. Anderson
Vice President, Duane Arnold Energy Center
FPL Energy Duane Arnold, LLC

Enclosures

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

Enclosure 1

Revised Proposed Technical Specification Pages (Marked-Up) and Bases Pages (Marked-Up)

18 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 (CBE)* 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~~ *CBE* boundary in MODES 1, 2, and 3.	*B.1 Initiate actions to implement mitigating actions.* *AND* *B.2 Verify mitigating actions ensure CBE occupant exposures to radiological hazards will not exceed limits and verify by administrative means that CBE occupants are protected from smoke and chemical hazards.* *AND* B.~~1~~3 Restore ~~control building~~ *CBE* 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 CBE 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 CBE 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, hazardous chemical release, or a smoke challenge. 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.

(continued)

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 all external areas adjacent to the CBE boundary 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. Unfiltered air leakage limits for hazardous chemicals must ensure that the exposure of CBE 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 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, hazardous chemicals or smoke.* ~~radiologically controlled environment from which the unit can be safely operated following a Design Basis Accident (DBA).~~

The safety related function of the 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.

(continued)

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 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 Reactor Building and outside atmosphere. A single SFU subsystem operating at a flow rate of 1000 cfm ±10% will also pressurize the CBE to a positive pressure above atmospheric pressure, under calm wind conditions (i.e. less than 5 mph wind speed) relative to external areas adjacent to the CBE boundary.* This will *minimize* ~~prevent~~ infiltration of air from *all surrounding areas adjacent to the CBE boundary* ~~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).

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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.

There are no offsite or onsite hazardous chemicals that would pose a credible threat to CBE habitability (Ref. 7). Consequently, engineered controls for the CBE are not required to ensure habitability against a chemical threat.

The evaluation of a smoke challenge demonstrated that smoke will not result in the inability of the CBE occupants to control the reactor either from the control room or from the remote shutdown system (Ref. 7). The assessment verified that a fire or smoke event anywhere within the plant would not simultaneously render the remote shutdown system and the CBE uninhabitable, nor would it prevent access from the CBE to the remote shutdown system in the event remote shutdown is required. No automatic SFU actuation is required for hazardous chemical releases or smoke and no Surveillance Requirements are required to verify OPERABILITY in cases of hazardous chemicals or smoke.

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*~~s~~ystem 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~~

(continued)

BASES

LCO (continued)

~~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.

~~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. In the event of an inoperable CBE boundary in MODES 1, 2, or 3, mitigating actions are required to ensure CBE occupants are protected from hazardous chemicals and smoke.

DAEC does not have automatic SFU actuation for hazardous chemicals or smoke. Current practices at DAEC do not utilize chemicals in sufficient quantity to present a chemical hazard to the CBE. Smoke is not considered in the DAEC safety analysis. Therefore, there are no specific limits at DAEC for hazardous chemicals or smoke.

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

(continued)

BASES

LCO (continued)

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);

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.

(continued)

BASES

ACTIONS (continued)

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. As discussed in the Applicable Safety Analyses section, the DAEC licensing basis identifies that CBE inleakage limits for hazardous chemicals and smoke are not necessary to protect the CBE occupants. Allowing verification by administrative means for hazardous chemicals and smoke is considered acceptable, since the limit established for radiological events is the limiting value for determining entry into Condition B for an inoperable CBE boundary. These administrative controls consist of the following:

- *Verification that the periodic check of onsite and offsite hazardous chemical sources has been performed within the last year; and*

- *Verification that the smoke analysis of Reference 7 remains valid and current.*

A periodic check of onsite and offsite hazardous chemical sources takes place once per year to ensure no onsite or offsite sources of hazardous chemicals exist that could present a chemical hazard to CBE ocupants. No onsite or offsite sources of hazardous chemicals currently exist that could present a chemical hazard to CBE occupants.

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 or chemical event or a challenge from smoke. Actions must be taken within 24 hours to verify that in the event of a DBA, the mitigating actions will ensure that 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 taken to offset the consequences of the inoperable CBE boundary) should be

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BASES

ACTIONS
(continued)

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

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BASES

ACTIONS (continued)

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.

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.

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BASES

ACTIONS (continued)

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*~~f~~requencies 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~~

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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 and the CBE occupants are protected from hazardous chemicals and smoke. For DAEC, there is no automatic SFU actuation for hazardous chemical releases or smoke and there are no Surveillance Requirements that verify OPERABILITY in cases of hazardous chemicals or smoke. 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).*

7. *Letter from Mark A. Peifer (NMC, LLC) to Document Control Desk (USNRC) dated January 28, 2005, "Generic Letter 2003-01: Control Room Habitability – Design Bases, Licensing Bases and Inleakage Testing Results. " (ADAMS Accession No. ML050390308).*

Enclosure 2

Revised Proposed Technical Specification Pages (Clean-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 (CBE) 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 CBE boundary in MODES 1, 2, and 3.	B.1 Initiate actions to implement mitigating actions. AND B.2 Verify mitigating actions ensure CBE occupant exposures to radiological hazards will not exceed limits and verify by administrative means that CBE occupants are protected from smoke and chemical hazards. AND B.3 Restore CBE 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 CBE 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 CBE 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

5.5.12 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 ≤ 1.0 L_a. During the first startup following testing in accordance with this program, the leakage rate acceptance criteria are: ≤ 0.60 L_a for the Type B and Type C tests; and, ≤ 0.75 L_a for the Type A tests; and

b. The air lock testing acceptance criterion is overall air lock leakage rate ≤ 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, hazardous chemical release, or a smoke challenge. 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.

(continued)

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 all external areas adjacent to the CBE boundary 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. Unfiltered air leakage limits for hazardous chemicals must ensure that the exposure of CBE 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 CBE habitability, determining CBE unfiltered inleakage, and measuring CBE pressure and assessing the CBE boundary as required by paragraphs c and d, respectively.