Entergy

Entergy Operations, Inc.
River Bend Station
5485 U. S. Highway 61N
St. Francisville, LA 70775
Tel 225 381 4374
Fax 225 381 4872
eolson@entergy.com

Eric W. Olson
Site Vice President

RBG-47600

August 4, 2015

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

Subject: Request for Interpretation of Technical Specifications
River Bend Station – Unit 1
Docket No. 50-458
License No. NPF-47

RBF1-15-0120

Dear Sir or Madam:

In accordance with NRC Inspection Manual Part 9900: Technical Guidance, "Licensee Technical Specification Interpretations," Entergy Operations, Inc. (EOI) requests that the Nuclear Regulatory Commission provide a written interpretation regarding the intent of the Technical Specification (TS) requirement concerning operability of the control building ventilation systems. The details of EOI's position can be found in Attachment 1. EOI's interpretation of the guidance is based on precedent in the NRC's clarification of operability requirements in Generic Letter 80-30 and River Bend Station's licensing basis documents.

EOI considers this position to be consistent with the licensing basis of the plant and with River Bend Station's compliance with General Design Criteria, as documented in the Updated Final Safety Analysis Report. This position is explained in Attachment 1, and the pertinent sections of the RBS Technical Specifications are included for reference in Attachment 2.

This letter contains no regulatory commitments. Should you have any questions or require additional information regarding this matter, please contact Mr. Joey Clark, Manager – Regulatory Assurance at (225)381-4177.

Sincerely,

Eric W. Olson

EWO/dhw

A001
NRR

Attachment 1 – EOI Position
Attachment 2 – Excerpts from RBS Technical Specifications

cc: NRC Senior Resident Inspector
River Bend Station

cc: Regional Administrator
U. S. Nuclear Regulatory Commission
Region IV
1600 E. Lamar Blvd.
Arlington, TX 76011-4511

Department of Environmental Quality
Office of Environmental Compliance
Radiological Emergency Planning and Response Section
Ji Young Wiley
P.O. Box 4312
Baton Rouge, LA 70821-4312

Public Utility Commission of Texas
1701 N. Congress Ave.
Austin, TX 78711-3326

Attachment 1
RBG-47600

Entergy Operations, Inc. Position

Request

As described below, the current regulatory guidance on operability and the Technical Specifications (TS) for River Bend Station (RBS) are being applied to the operation of the control building ventilation system, as well as maintenance of the operability of the electrical systems served by that system, in the event that components / subsystems in the ventilation system become nonfunctional. This description of the application of current requirements is provided here. It is requested that NRC provide a written interpretation of the TS requirements as they relate to the postulated failure of the control building heating, ventilation, and air conditioning (HVAC) system, and in particular, for the unusual configuration that is summarized in the letter to Perry station (Reference 4) where non-TS support systems have 100 percent capacity subsystems, each capable of supporting both trains.

Reason for Request

During recent NRC inspection activities at RBS, questions were raised by the inspectors as to the correct application of TS Required Actions in the event that particular combinations of non-Technical Specification support subsystems / components become nonfunctional. Specifically, the issue relates to the functionality of the HVAC systems that serve the control building, which includes the main control room, safety-related battery and switchgear rooms, and other areas.

The control building HVAC systems (HVC-ACU2A and 2B) are served by two independent trains of chilled water designated as Loop A (Division 1) and Loop B (Division 2), either of which is capable of handling all heat loads in the building. Each loop of chilled water serves independent and fully redundant air handling and cooling coil systems in the various areas served by the HVAC system. Each loop of the chilled water system is served by two chillers, each fully redundant and capable of removing the full post-accident heat load independently. (The redundant chillers supporting each loop are configured such that both cannot operate simultaneously.)

RBS Design Basis

Redundant chillers provide cooling to each HVAC system loop in the control building so that the HVAC system provides cooling, heating, ventilation, pressurization, and smoke removal for several areas within the building. The HVAC system comprises two independent, redundant trains of components and subsystems either of which carry out the safety function of providing a controlled environment for the safety of the main control room operators and for the environmental requirements of the safety-related electrical equipment in the building. Each control building HVAC train is supported by the respective Class 1E emergency diesel generator.

NUREG-0989, NRC Safety Evaluation Report (SER) for River Bend Station (Reference 3), Section 9.4.1, states that "the control building ventilation system is composed of three separate ventilation systems and a common chilled water system. These systems are:

1. Main control room air conditioning system
2. Standby switchgear rooms air conditioning system
3. Chiller equipment room air conditioning system
4. Control building chilled water system (CBCWS)"

SER Section 9.4.1.(4) states: "Each train is capable of meeting the total chilled water needs of the building, thus complying with [General Design Criterion]GDC 44, 'Cooling Water.'" SER Section 9.4.1(5) states "Thus, the control building ventilation system complies with SRP 9.4.1, and it is, therefore, acceptable."

The control building chilled water system (mark number prefix "HVK") provides chilled water to the cooling coils in the air handling units serving the various areas in the building. The system contains two separate, redundant trains of chillers and support equipment.

The control room fresh air system (mark number prefix "HVC") removes the heat generated within the various areas of the control building to maintain the required environmental conditions. Air handlers serve the main control room, standby switchgear rooms, battery / charger rooms, inverter rooms, and chiller rooms. Each air handler serves both trains of their assigned areas (e.g., both the Division 1 and 2 standby switchgear rooms cooling may be fully served by the air handler in either train).

Each train of HVK contains two 100% capacity chillers. Each train is capable of supporting the safety function of all areas and components in the control building. The HVK system, as a whole, includes:

- Four (4) 100% capacity refrigeration chillers
  - Division 1 – HVK-CHL1A and C
  - Division 2 – HVK-CHL1B and D

- Four (4) 100% capacity chilled water pumps
  - Division 1 – HVK-P1A and C
  - Division 2 – HVK-P1B and D

The HVC system includes:

- Six (6) air handling units
  - Division 1 - HVC-ACU1A, 2A and 3A
  - Division 2 - HVC-ACU1B, 2B and 3B

Each of the four HVK chillers is capable of removing all heat from the building by itself. The system is designed such that only one chiller can be in operation at a time. In the event that both chillers in a train are not functional, one chiller in the remaining operable train is fully capable of removing the required heat for both trains of equipment.

The RBS design is consistent with the Perry station with regard having two 100 percent capacity subsystems, each capable of supporting both trains.

RBS Licensing Basis

In April 1980, the NRC published Generic Letter 80-30, "Clarification of the Term 'Operable' as it Applies to Single Failure Criterion for Safety Systems Required by Technical Specifications," which required all licensees, including RBS, to revise their definition of Operability. This letter explained that the NRC's single failure criterion for systems that are relied upon in the safety analysis report "is preserved by specifying Limiting Conditions for Operations (LCOs) that require all redundant components of safety related systems to be OPERABLE." It continued, "The specified time to take action, usually called the equipment out-of-service time, is a temporary relaxation of the single failure criterion, which, consistent with overall system reliability considerations, provides a limited time to fix equipment or otherwise make it OPERABLE." The Generic Letter further stated that the LCO does not "address the effects of outages of any support systems - such as electrical power or cooling water - that are relied upon to maintain the OPERABILITY of the particular system."

In April 2002, NRC sent a letter to the First Energy Operating Company regarding the Perry nuclear power plant titled, "Application of Generic Letter 80-30 Guidance to an Inoperable Non-Technical Specification Support Subsystem," (referred to as the Perry letter). The letter was to address questions from the Perry staff regarding "how to address the single failure design criterion for support systems that are not included in the Technical Specifications (TS) that provide a support function for systems that are included in the TS." The NRC Safety Evaluation attached to the letter provides the following additional clarification to the guidance provided in the generic letter that is considered generic and applicable to all plants and is not limited to the Perry Nuclear Station:

> "In some designs, the non-TS support system has two redundant 100 percent capacity subsystems, each capable of supporting both TS trains. Loss of one support subsystem does not result in a loss of support for either train of TS equipment. Both TS trains remain operable, despite a loss of support function redundancy, because the <u>TS definition of operability does not require a TS subsystem's necessary support function to meet the single-failure design criterion</u>. Thus, no TS limits the duration of the non-TS support subsystem outage, even though the single-failure design requirement of the supported TS systems is not met. However, by assessing and managing risk in accordance with [10 CFR 50.65](a)(4), the licensee can determine an appropriate duration for the maintenance activity. Use of administrative controls to implement such a risk-informed limitation is an acceptable basis for also allowing a temporary departure from the design-basis configuration during such maintenance. (emphasis added).
>
> For the unusual non-TS support system design configuration described, the preceding is a clarification of the previous staff position (GL 80-30) regarding when a temporary departure from the single-failure design criterion is allowed. This allowance would be permitted regardless of whether the maintenance is corrective or preventive."

The RBS Technical Specifications govern the HVK and HVC systems, as follows:

1. TS 3.7.2, Control Room Fresh Air System, contains the operability requirements for the safety-related air handling equipment that establishes and maintains the main control room

envelope for the protection of the operators. The systems are required to be operable (1) when the plant is in MODE 1, 2, or 3, (2) when handling recently irradiated fuel in the primary containment or fuel building, or (3) when conducting operations with the potential to drain the reactor vessel. (Reference 1)

2. TS 3.7.3, Control Room Air Conditioning System, contains the operability requirements for the safety-related systems that remove heat from the main control room. The conditions of Applicability (times during which the equipment is to be operable) are identical to those of TS 3.7.2. (Reference 2).

These Technical Specifications address only those components / subsystems that support the safety function of maintaining habitability of the main control room. That involves only the HVK chillers, the main control room air handlers (HVC-ACU1A/B), and the HVC charcoal filter trains. The other air handlers that service the standby switchgear room, battery rooms, inverter rooms, and chiller rooms are not specifically addressed by the TSs, even though they receive chilled water from the HVK chillers. Thus, the air handlers other than the main control room air handlers are non-TS support systems, as addressed in LCO 3.0.6.

The 2002 guidance was used in September 2010 as the technical basis to revise the Bases section of LCO 3.0.6 in the RBS Technical Specifications, pursuant to an evaluation under 10 CFR 50.59. The RBS design is similar to that of Perry, in that each train contains two 100% capacity chillers. Perry made a similar Bases change. The revised Bases state:,

"In some cases, the non-TS support system has two redundant 100 (continued) percent capacity subsystems, each capable of supporting both TS divisions (e.g., HVR-UC11A and B). Loss of one support subsystem does not result in a loss of support for either division of TS equipment. Both TS divisions remain operable, despite a loss of support function redundancy, because the TS definition of operability does not require a TS subsystem's necessary support function to meet the single-failure design criterion. Thus, no TS limits the duration of the non-TS support subsystem outage, even though the single-failure design requirement of the supported TS systems is not met. However, by assessing and managing risk in accordance with 10 CFR 50.65(a)(4), an appropriate duration for the maintenance activity can be determined. Use of administrative controls to implement such a risk-informed limitation is an acceptable basis for also allowing a temporary departure from the design basis configuration during such maintenance. This allowance is permitted regardless of whether the maintenance is corrective or preventive."

Entergy's Position

Because of the specific language in TS 3.7.2 and 3.7.3 concerning the control room air conditioning, since initial plant startup in 1985, RBS has treated the HVK chilled water system as part of control room air conditioning for purposes of meeting LCO 3.7.3. The TS 3.7.3 Bases description of the control room air conditioning system specifically mentions the HVC chillers:

"The Control Room AC System provides temperature control for the control room following isolation of the control room.

> The Control Room AC System consists of two independent, redundant subsystems that provide cooling and heating of recirculated control room air. Each subsystem consists of heating coils, cooling coils, fans, chillers, compressors, ductwork, dampers, and instrumentation and controls to provide for control room temperature control.
>
> The Control Room AC System is designed to provide a controlled environment under both normal and accident conditions. The Control Room AC System operation in maintaining the control room temperature is discussed in the USAR, Sections 6.4 and 9.4.1."

Therefore, when a HVK chilled water train is not operable, the associated control room air conditioning train is inoperable.

Other TS systems supported by the HVK system do not discuss the HVK system in the Bases. For the systems served by the HVK chilled water system other than the control room air conditioning system, the HVK system is a support system and not a part of the supported system. Hence, if an entire train of HVK chillers is not functional, only LCO 3.7.3 is declared not met (i.e., 30-day shutdown for one train, and 7 day shutdown for both trains).

Since the HVK system is not a part of the TS air conditioning systems other than the control room air conditioning system, the loss of one train of HVK does not result in the inoperability of supported TS equipment, provided the other HVK train is functional, because HVC-ACU2A and 2B are capable of removing 100 percent of the heat load for the supported equipment in both divisions.

The loss of a single chiller in either HVK loop does not result in the loss of functionality of either train of HVK and loss of an HVK loop does not result in a loss of operability of the supported TS systems.

Risk Analysis

EOI acknowledges that probabilistic risk assessment (PRA) cannot be used in determining operability, as discussed in IMC-0326, Section C.06. However, in order to ensure that the EOI position is consistent with safe plant operation, a risk evaluation was performed for plant operation with a non-functional control building chilled water system train.

The evaluation of more realistic control building room heat-up and equipment survivability temperature criteria for electrical equipment in the control building required a revision of the RBS PRA model. These changes were applied to revision 5 of the at-power equipment out-of-service (EOOS) model. The risk associated with the unavailability of one division of control building chilled water, when crediting the realistic room heat-up and equipment survivability, is calculated to correspond to an increase of core damage frequency (CDF) of < 4E-09/year. This risk is of very low safety significance. The corresponding increase in large early release fraction (LERF) is expected to be substantially less, due to the small overall contribution of LERF (two orders of magnitude less than CDF), and the small relative contribution of station black-out to LERF compared to CDF. The inclusion of more realistic room heat-up rates and equipment survivability temperature criteria decreases the safety significance of control building cooling equipment. This evaluation did not credit service water direct cooling of HVC-ACU2 units.

Conclusion

RBS considers the HVK chilled water system as a non-TS support system for all applications except the control room air conditioning system. In summary, in the event that one train of HVK chilled water becomes inoperable, the supported divisional equipment is operable because cooling is maintained by the redundant support division. This position is supported by the RBS design and licensing basis. In the event of loss of one entire train of HVK, the correct application of TS requirements is that one train of control room air conditioning (LCO 3.7.3) is inoperable. All other TS LCOs are met. When one of the two redundant chillers in an HVK train is not functional, both trains of HVK are still functional. This position would apply to other non-TS support systems that have 100 percent capacity subsystems, each capable of supporting both trains.

References

1. River Bend Station Technical Specification TS 3.7.2
2. River Bend Station Technical Specification TS 3.7.3
3. NUREG-0989, Safety Evaluation Report Related to the Operation of River Bend Station, May 1984
4. Letter dated April 5, 2002, Douglas Pickett (NRC) to Guy Campbell (First Energy Nuclear Operating Company), Application of Generic Letter 80-30 Guidance to an Inoperable Non-Technical Specification Support Subsystem (ML020950074)

Attachment 2
RBG-47600

Excerpts from RBS Technical Specifications:

Limiting Condition for Operation (LCO) 3.0.6 and Bases
LCO (and Bases) 3.7.2, Control Room Fresh Air System
LCO (and Bases) 3.7.3, Control Room Air Conditioning System

3.0 LCO APPLICABILITY

LCO 3.0.4 (continued)

b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or

c. When an allowance is stated in the individual value, parameter, or other Specification.

This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

LCO 3.0.5

Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to LCO 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

LCO 3.0.6

When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system. In this event, additional evaluations and limitations may be required in accordance with Specification 5.5.10, "Safety Function Determination Program (SFDP)." If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

When a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.

(continued)

BASES

LCO 3.0.5 (continued)

The administrative controls ensure the time the equipment is returned to service in conflict with the requirements of the ACTIONS is limited to the time absolutely necessary to perform the allowed SRs. This Specification does not provide time to perform any other preventive or corrective maintenance.

An example of demonstrating the OPERABILITY of the equipment being returned to service is reopening a containment isolation valve that has been closed to comply with Required Actions, and must be reopened to perform the SRs.

An example of demonstrating the OPERABILITY of other equipment is taking an inoperable channel or trip system out of the tripped condition to prevent the trip function from occurring during the performance of an SR on another channel in the other trip system. A similar example of demonstrating the OPERABILITY of other equipment is taking an inoperable channel or trip system out of the tripped condition to permit the logic to function and indicate the appropriate response during the performance of an SR on another channel in the same trip system.

LCO 3.0.6

LCO 3.0.6 establishes an exception to LCO 3.0.2 for support systems that have an LCO specified in the Technical Specifications (TS). This exception is provided because LCO 3.0.2 would require that the Conditions and Required Actions of the associated inoperable supported system's LCO be entered solely due to the inoperability of the support system. This exception is justified because the actions that are required to ensure the plant is maintained in a safe condition are specified in the support systems' LCO's Required Actions. These Required Actions may include entering the supported system's Conditions and Required Actions or may specify other Required Actions.

When a support system is inoperable and there is an LCO specified for it in the TS, the supported system(s) are required to be declared inoperable if determined to be inoperable as a result of the support system inoperability. However, it is not necessary to enter into the supported systems' Conditions and Required Actions unless directed to do so by the support system's Required Actions. The

(continued)

BASES

LCO 3.0.6 (continued)

potential confusion and inconsistency of requirements related to the entry into multiple support and supported systems' LCO's Conditions and Required Actions are eliminated by providing all the actions that are necessary to ensure the plant is maintained in a safe condition in the support system's Required Actions.

However, there are instances where a support system's Required Action may either direct a supported system to be declared inoperable or direct entry into Conditions and Required Actions for the supported system. This may occur immediately or after some specified delay to perform some other Required Action. Regardless of whether it is immediate or after some delay, when a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.

Specification 5.5.10, "Safety Function Determination Program" (SFDP), ensures loss of safety function is detected and appropriate actions are taken. Upon failure to meet two or more LCOs concurrently, an evaluation shall be made to determine if loss of safety function exists. Additionally, other limitations, remedial actions, or compensatory actions may be identified as a result of the support system inoperability and corresponding exception to entering supported system Conditions and Required Actions. The SFDP implements the requirements of LCO 3.0.6.

Cross division checks to identify a loss of safety function for those support systems that support safety systems are required. The cross division check verifies that the supported systems of the redundant OPERABLE support system are OPERABLE, thereby ensuring safety function is retained. If this evaluation determines that a loss of safety function exists, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

LCO 3.0.6 addresses support systems that have an LCO specified in the TS. For support systems that do not have an LCO specified in the TS, the following guidance applies.

In most cases, the non-TS support system has two subsystems, each supporting just one TS division of safety equipment. The duration of a maintenance activity on such a non-TS support system is limited by the Required Action Completion Times of the supported TS system(s). In this case, because the outage time of the non-TS support system is limited by the supported system TSs, the plant is temporarily allowed to depart from the single-failure design criterion, but sole reliance on the TS limitations is not appropriate. Risk of the outage must still be assessed and managed in accordance with 10 CFR 50.65(a)(4).

(continued)

BASES

LCO 3.0.6 (continued)

In some cases, the non-TS support system has two redundant 100 percent capacity subsystems, each capable of supporting both TS divisions (e.g., HVR-UC11A and B). Loss of one support subsystem does not result in a loss of support for either division of TS equipment. Both TS divisions remain operable, despite a loss of support function redundancy, because the TS definition of operability does not require a TS subsystem's necessary support function to meet the single-failure design criterion. Thus, no TS limits the duration of the non-TS support subsystem outage, even though the single-failure design requirement of the supported TS systems is not met. However, by assessing and managing risk in accordance with 10 CFR 50.65(a)(4), an appropriate duration for the maintenance activity can be determined. Use of administrative controls to implement such a risk-informed limitation is an acceptable basis for also allowing a temporary departure from the design-basis configuration during such maintenance. This allowance is permitted regardless of whether the maintenance is corrective or preventive.

Although not expected, if the risk assessment determines that the support subsystem may inoperable for more than 90 days, then an evaluation of the maintenance configuration as a change to the facility under 10 CFR 50.59 must be made, including consideration of the single-failure design criterion.

When a non-TS support subsystem is unexpectedly found to be in a degraded or nonconforming condition, a prompt determination of operability / functionality must be made. If the non-TS support subsystem determined to be inoperable (non-functional), then it must be determined whether the subsystem's support function is actually needed to support OPERABILITY of the TS supported systems. If the support function is required, then the risk-management strategies of the TS and 10 CFR 50.65(a)(4), as described above for planned maintenance, will determine the appropriate actions and time limits to return the non-TS subsystem to operable (functional) status. If the non-TS support function cannot maintained, then enter the LCO(s) of the TS supported system(s).

LCO 3.0.7

There are certain special tests and operations required to be performed at various times over the life of the unit. These special tests and operations are necessary to

(continued)

3.7 PLANT SYSTEM

3.7.2 Control Room Fresh Air (CRFA) System

LCO 3.7.2 Two CRFA subsystems shall be OPERABLE.

---NOTE---

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

APPLICABILITY: MODES 1, 2, and 3,
During movement of recently irradiated fuel assemblies in the primary containment, or fuel building.

During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

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

(continued)

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 ----------NOTE----------- LCO 3.0.4.a is not applicable when entering MODE 3. ------------------------------ Be in MODE 3.	12 hours
D. Required Action and associated Completion Time of Condition A not met during movement of recently irradiated fuel assemblies in the primary containment or fuel building or during OPDRVs.	-----------------NOTE----------------- LCO 3.0.3 is not applicable. --	
	D.1 Place OPERABLE CRFA subsystem in emergency mode.	Immediately
	<u>OR</u>	
	D.2.1 Suspend movement of recently irradiated fuel assemblies in the primary containment and fuel building.	Immediately
	<u>AND</u>	
	D.2.2 Initiate action to suspend OPDRVs.	Immediately
E. Two CRFA subsystems inoperable in MODE 1, 2, or 3 for reasons other than Condition B.	E.1 ----------NOTE----------- LCO 3.0.4.a is not applicable when entering MODE 3. ------------------------------ Be in MODE 3.	12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two CRFA subsystems inoperable during movement of recently irradiated fuel assemblies in the primary containment or fuel building, or during OPDRVs.	F.1 Suspend movement of recently irradiated fuel assemblies in the primary containment and fuel building.	Immediately
OR	AND	
One or more CRFA subsystems inoperable due to inoperable CRE boundary during movement of recently irradiated fuel assemblies in the primary containment or fuel building, or during OPDRVs.	F.2 Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.2.1	Operate each CRFA subsystem for ≥ 15 continuous minutes.	31 days
SR 3.7.2.2	Perform required CRFA filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.2.3	Verify each CRFA subsystem actuates on an actual or simulated initiation signal.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.2.4	Perform required CRE unfiltered air inleakage testing in accordance with CRE Habitability Program.	In accordance with the CRE Habitability Program

B 3.7 PLANT SYSTEMS

B 3.7.2 Control Room Fresh Air (CRFA) System

BASES

BACKGROUND	The CRFA System provides a protected environment from which occupants can control the unit following an uncontrolled release of radioactivity, hazardous chemicals, or smoke. The safety related function of the CRFA System used to control radiation exposure consists of two independent and redundant high efficiency air filtration subsystems for treatment of recirculated air or outside supply air and a CRE boundary that limits the inleakage of unfiltered air. Each CRFA subsystem consists of a demister, a prefilter, 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. Demisters remove water droplets from the airstream. Prefilters and HEPA filters remove particulate matter which may be radioactive. The charcoal adsorbers provide a holdup period for gaseous iodine, allowing time for decay. The CRE is the area within the confines of the CRE boundary that contains the spaces that control room occupants inhabit to control the unit during normal and accident conditions. This area encompasses the control room, and may encompass other non-critical areas to which frequent personnel access or continuous occupancy is not necessary in the event of an accident. The CRE is protected for normal operation, natural events, and accident conditions. The CRE boundary is the combination of walls, floor, roof, ducting, doors, penetrations, and equipment that physically form the CRE. The OPERABILITY of the CRE boundary must be maintained to ensure that the inleakage of unfiltered air into the CRE will not exceed the inleakage assumed in the licensing basis analysis of design basis accident (DBA) consequences to CRE occupants. The CRE and its boundary are defined in the Control Room Envelope Habitability Program. In addition to the safety related standby emergency filtration function, parts of the CRFA System are operated to maintain the CRE environment during normal operation. Upon receipt of the initiation signal(s) (indicative of conditions that could result in radiation exposure to CRE occupants, the CRFA System automatically switches to the isolation mode of operation to minimize infiltration of contaminated air into the CRE. A system of dampers isolates the CRE, and CRE air flow is recirculated and processed through either of the two filter subsystems. The CRFA System is designed to maintain a habitable environment in the CRE for a 30 day continuous occupancy after a DBA, per the requirements of GDC 19 and 10CFR50.67. CRFA System operation in maintaining the CRE habitability is discussed in the USAR, Sections 6.4.1 and 9.4.1 (Refs. 1 and 2, respectively).
APPLICABLE SAFETY ANALYSES	The ability of the CRFA System to maintain the habitability of the CRE is an explicit assumption for the safety analyses presented in the USAR, Chapters 6

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

and 15 (Refs. 3 and 4, respectively). The isolation mode of the CRFA System is assumed to operate following a DBA. The radiological doses to CRE occupants as a result of the various DBAs are summarized in Reference 4. No single active or passive failure will cause the loss of outside or recirculated air from the CRE.

The CRFA System provides protection from smoke and hazardous chemicals to the CRE occupants. The analysis of hazardous chemical releases demonstrates that the toxicity limits are not exceeded in the CRE following a hazardous chemical release (Ref. 5). The evaluation of a smoke challenge demonstrates that it will not result in the inability of the CRE occupants to control the reactor either from the control room or from the remote shutdown panels (Ref. 6).

The CRFA System satisfies Criterion 3 of the NRC Policy Statement.

LCO

Two redundant subsystems of the CRFA System are required to be OPERABLE to ensure that at least one is available, if a single active failure disables the other subsystem. Total CRFA system failure, such as from a loss of both ventilation subsystems or from an inoperable CRE boundary, could result in a failure to meet the dose requirements of GDC 19 and 10CFR50.67 in the event of a DBA.

Each CRFA subsystem is considered OPERABLE when the individual components necessary to limit CRE occupant exposure are OPERABLE. A subsystem is considered OPERABLE when its associated:

a. Fan is OPERABLE;

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

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

In order for the CRFA subsystems to be considered OPERABLE, the CRE boundary must be maintained such that the CRE occupant dose from a large radioactive release does not exceed the calculated dose in the licensing basis consequence analyses for DBAs, and that CRE occupants are protected from hazardous chemicals and smoke.

The LCO is modified by a Note allowing the CRE boundary to be opened intermittently under administrative controls. This Note only applies to openings in the CRE boundary that can be rapidly restored to the design condition, such as doors, hatches, floor plugs, and access panels. For entry and exit through 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 CRE. This individual will have a method to rapidly close the opening and to restore the CRE boundary to a condition equivalent to the design condition when a need for CRE isolation is indicated.

(continued)

BASES

APPLICABILITY

In MODES 1, 2, and 3, the CRFA System must be OPERABLE to ensure that the CRE will remain habitable 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 due to the pressure and temperature limitations in these MODES. Therefore, maintaining the CRFA 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); and

b. During the movement of recently irradiated fuel assemblies in the primary containment or fuel building.

ACTIONS

A.1

With one CRFA subsystem inoperable for reasons other than an inoperable CRE boundary, the inoperable CRFA subsystem must be restored to OPERABLE status within 7 days. With the unit in this condition, the remaining OPERABLE CRFA subsystem is adequate to perform the CRE occupant protection function. However, the overall reliability is reduced because a failure in the OPERABLE subsystem could result in loss of CRFA System function. 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 CRE boundary and into the CRE can result in CRE occupant radiological dose greater than the calculated dose of the licensing basis analyses of DBA consequences (allowed to be up to 5 rem TEDE), or inadequate protection of CRE occupants from hazardous chemicals or smoke, the CRE boundary is inoperable. Actions must be taken to restore an OPERABLE CRE boundary within 90 days.

During the period that the CRE boundary is considered inoperable, action must be initiated to implement mitigating actions to lessen the effect on CRE occupants from the potential hazards of a radiological 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 CRE occupant radiological exposures will not exceed the calculated dose of the licensing basis analyses of DBA consequences, and that CRE occupants are protected from hazardous chemicals and smoke. These mitigating actions (i.e., actions that are taken to offset the consequences of the inoperable CRE boundary) should be preplanned for

(continued)

BASES

ACTIONS (continued)

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

C.1

In MODE 1, 2, or 3, if the inoperable CRFA subsystem or the CRE boundary cannot be restored to OPERABLE status within the required Completion Time, the unit must be placed in a MODE that minimizes overall plant risk. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours.

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 11) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Required Action C.1 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 3. This Note prohibits the use of LCO 3.0.4.a to enter MODE 3 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 3, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

The allowed Completion Time is reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

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

The Required Actions of Condition D are modified by a Note indicating that LCO 3.0.3 does not apply. If moving recently irradiated fuel assemblies while in MODE 1, 2, or 3, the

(continued)

BASES

ACTIONS

D.1, D.2.1, and D.2.2 (continued)

fuel movement is independent of reactor operations. Therefore, inability to suspend movement of recently irradiated fuel assemblies is not sufficient reason to require a reactor shutdown.

During movement of recently irradiated fuel assemblies in the primary containment or fuel building or during OPDRVs, if the inoperable CRFA subsystem cannot be restored to OPERABLE status within the required Completion Time, the OPERABLE CRFA subsystem may be placed in the emergency mode. 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 CRE. This places the unit in a condition that minimizes the accident risk.

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

E.1

If both CRFA subsystems are inoperable in MODE 1, 2, or 3, for reasons other than an inoperable CRE, the CRFA System may not be capable of performing the intended function and the unit is in a condition outside of the accident analyses.

Therefore, the plant must be brought to a MODE in which the overall plant risk is minimized. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours.

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 11) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

(continued)

BASES

ACTIONS (continued)

Required Action E.1 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 3. This Note prohibits the use of LCO 3.0.4.a to enter MODE 3 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 3, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

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

(continued)

BASES

ACTIONS (continued)

F.1 and F.2

During movement of recently irradiated fuel assemblies in the primary containment or fuel building or during OPDRVs, with two CRFA subsystems inoperable, or with one or more CRFA subsystems inoperable due to an inoperable CRE boundary, action must be taken immediately to suspend activities that present a potential for releasing radioactivity that might require isolation of the CRE. This places the unit in a condition that minimizes the accident risk.

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

SURVEILLANCE REQUIREMENTS

SR 3.7.2.1

This SR verifies that a subsystem in a standby mode starts on demand from the control room and continues to operate with flow through the HEPA filters and charcoal adsorbers. Standby systems should be checked periodically to ensure that they start and function properly. As the environmental and normal operating conditions of this system are not severe, testing each subsystem once every month provides an adequate check on this system. Furthermore, the 31 day Frequency is based on the known reliability of the equipment and the two subsystem redundancy available.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.2.2

This SR verifies that the required CRFA testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The CRFA filter tests are in accordance with Regulatory Guide 1.52 (Ref. 5). 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 Frequencies and additional information are discussed in detail in the VFTP.

SR 3.7.2.3

This SR verifies that each CRFA subsystem starts and operates on an actual or simulated initiation signal. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.7.1.5 overlaps this SR to provide complete testing of the safety function.

SR 3.7.2.4

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

The CRE is considered habitable when the radiological dose to CRE occupants calculated in the licensing basis analyses of DBA consequences is no more than 5 rem TEDE and the CRE occupants are protected from hazardous chemicals and smoke. This SR verifies that the unfiltered air inleakage into the CRE is no greater than the flow rate assumed in the licensing basis analyses of DBA consequences. When unfiltered air inleakage is greater than the assumed flow rate, Condition B must be entered. Required Action B.3 allows time to restore the CRE boundary to OPERABLE status provided mitigating actions can ensure that the CRE remains within the licensing basis habitability limits for the occupants following an accident. Compensatory measures are discussed in Regulatory Guide 1.196, Section C.2.7.3, (Ref. 7) which endorses, with exceptions, NEI 99-03, Section 8.4 and Appendix F (Ref. 8). 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. 9). Options for restoring the CRE boundary to OPERABLE status include changing the licensing basis DBA consequence analysis, repairing the CRE boundary, or a combination of these actions. Depending upon the nature of the problem and the corrective action, a full scope inleakage test may not be necessary to establish that the CRE boundary has been restored to OPERABLE status.

(continued)

BASES (continued)

REFERENCES

1. USAR, Section 6.4.1.
2. USAR, Section 9.4.1.
3. USAR, Chapter 6.
4. USAR, Chapter 15.
5. USAR, Chapter 6.4
6. USAR, Chapter 9.5
7. Regulatory Guide 1.196
8. NEI 99-03, "Control Room Habitability Assessment," June 2001
9. 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).
10. 10CFR50.67.
11. NEDC-32988-A, Revision 2, Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants, December 2002.

3.7 PLANT SYSTEMS

3.7.3 Control Room Air Conditioning (AC) System

LCO 3.7.3 Two control room AC subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
During movement of recently irradiated fuel assemblies in the primary containment or fuel building.

During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One control room AC subsystem inoperable.	A.1 Restore control room AC subsystem to OPERABLE status.	30 days
B. Two control room AC subsystems inoperable.	B.1 Verify control room area temperature ≤ 104°F.	Once per 4 hours
	AND	
	B.2 Restore one control room AC subsystem to OPERABLE status.	7 days
C. Required Action and Associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	C.1 ----------NOTE----------- LCO 3.0.4.a is not applicable when entering MODE 3. ------------------------------ Be in MODE 3.	12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A not met during movement of recently irradiated fuel assemblies in the primary containment or fuel building, or during OPDRVs.	------------------NOTE------------------ LCO 3.0.3 is not applicable. ---	
	D.1 Place OPERABLE control room AC subsystem in operation.	Immediately
	OR	
	D.2.1 Suspend movement of recently irradiated fuel assemblies in the primary containment and fuel building.	Immediately
	AND	
	D.2.2 Initiate action to suspend OPDRVs.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required Action and associated Completion Time of Condition B not met during movement of recently irradiated fuel assemblies in the primary containment or fuel building, or during OPDRVs.	E.1 Suspend movement of recently irradiated fuel assemblies in the primary containment and fuel building. AND E.2 Initiate action to suspend OPDRVs.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Verify each control room AC subsystem has the capability to remove the assumed heat load.	24 months

B 3.7 PLANT SYSTEMS

B 3.7.3 Control Room Air Conditioning (AC) System

BASES

BACKGROUND	The Control Room AC System provides temperature control for the control room following isolation of the control room. The Control Room AC System consists of two independent, redundant subsystems that provide cooling and heating of recirculated control room air. Each subsystem consists of heating coils, cooling coils, fans, chillers, compressors, ductwork, dampers, and instrumentation and controls to provide for control room temperature control. The Control Room AC System is designed to provide a controlled environment under both normal and accident conditions. The Control Room AC System operation in maintaining the control room temperature is discussed in the USAR, Sections 6.4 and 9.4.1 (Refs. 1 and 2, respectively).
APPLICABLE SAFETY ANALYSES	The design basis of the Control Room AC System is to maintain the control room temperature for a 30 day continuous occupancy. The Control Room AC System components are arranged in redundant safety related subsystems. During emergency operation, the Control Room AC System maintains a habitable environment and ensures the OPERABILITY of components in the control room. A single active failure of a component of the Control Room AC System, assuming a loss of offsite power, does not impair the ability of the system to perform its design function. Redundant detectors and controls are provided for control room temperature control. The Control Room AC System is designed in accordance with Seismic Category I requirements. The Control Room AC System is capable of removing sensible and latent heat loads from the control room, including consideration of equipment heat loads and personnel occupancy requirements to ensure equipment OPERABILITY. The Control Room AC System satisfies Criterion 3 of the NRC Policy Statement.

(continued)

BASES (continued)

LCO	Two independent and redundant subsystems of the Control Room AC System are required to be OPERABLE to ensure that at least one is available, assuming a single failure disables the other subsystem. Total system failure could result in the equipment operating temperature exceeding limits. The Control Room AC System is considered OPERABLE when the individual components necessary to maintain the control room temperature are OPERABLE in both subsystems. These components include the cooling coils, fans, chillers, compressors, ductwork, dampers, and associated instrumentation and controls.
APPLICABILITY	In MODE 1, 2, or 3, the Control Room AC System must be OPERABLE to ensure that the control room temperature will not exceed equipment OPERABILITY limits. In MODES 4 and 5, the probability and consequences of a Design Basis Accident are reduced due to the pressure and temperature limitations in these MODES. Therefore, maintaining the Control Room AC 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) and; b. During movement of recently irradiated fuel assemblies in the primary containment or fuel building.
ACTIONS	<u>A.1</u> With one control room AC subsystem inoperable, the inoperable control room AC subsystem must be restored to OPERABLE status within 30 days. With the unit in this condition, the remaining OPERABLE control room AC subsystem is adequate to perform the control room air conditioning function. However, the overall reliability is reduced because a single failure in the OPERABLE subsystem could result in loss of the control room air conditioning

(continued)

BASES

ACTIONS

A.1 (continued)

function. The 30 day Completion Time is based on the low probability of an event occurring requiring control room isolation, the consideration that the remaining subsystem can provide the required protection, and the availability of alternate cooling methods.

B.1 and B.2

If both control room AC subsystems are inoperable, the Control Room AC System may not be capable of performing its intended function. Therefore, the control room area temperature is required to be monitored once per 4 hours to ensure that temperature is being maintained low enough that equipment in the control room is not adversely affected. With the control room temperature being maintained within the temperature limit, 7 days is allowed to restore a control room AC subsystem to OPERABLE status. These Completion Times are reasonable considering that the control room temperature is being maintained within limits, the low probability of an event occurring requiring control room isolation, and the availability of alternate cooling methods.

C.1

In MODE 1, 2, or 3, if the control room area temperature cannot be maintained ≤ 104°F or if the inoperable control room AC subsystem cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE that minimizes risk. To achieve this status the unit must be placed in at least MODE 3 within 12 hours.

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 3) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Required Action C.1 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 3. This Note prohibits the use of LCO 3.0.4.a to enter MODE 3 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 3, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

(continued)

BASES

ACTIONS (continued)

The allowed Completion Time is reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

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

The Required Actions of Condition C are modified by a Note indicating that LCO 3.0.3 does not apply.

(continued)

BASES

ACTIONS

D.1, D.2.1, and D.2.2 (continued)

If moving recently irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, inability to suspend movement of recently irradiated fuel assemblies is not sufficient reason to require a reactor shutdown.

During movement of recently irradiated fuel assemblies in the primary containment or fuel building or during OPDRVs, if Required Action A.1 cannot be completed within the required Completion Time, the OPERABLE control room AC subsystem may be placed immediately in operation. This action ensures that the remaining subsystem is OPERABLE, that no failures that would prevent 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 control room. This places the unit in a condition that minimizes risk.

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

E.1 and E.2

During movement of recently irradiated fuel assemblies in the primary containment or fuel building or during OPDRVs if the Required Action and associated Completion Time of Condition B is not met, action must be taken to immediately suspend activities that present a potential for releasing radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk.

If applicable, handling of recently irradiated fuel in the primary containment or fuel building must be suspended immediately. Suspension of these activities shall

(continued)

BASES

ACTIONS	E.1 and E.2 (continued) not preclude completion of movement of a component to a safe position. Also, if applicable, actions must be initiated immediately to suspend OPDRVs to minimize the probability of a vessel draindown and subsequent potential for fission product release. Actions must continue until the OPDRVs are suspended.
SURVEILLANCE REQUIREMENTS	SR 3.7.3.1 This SR verifies that the heat removal capability of the system is sufficient to remove the control room heat load assumed in the safety analysis. The SR consists of a combination of testing and calculation. The 24 month Frequency is appropriate since significant degradation of the Control Room AC System is not expected over this time period.
REFERENCES	1. USAR, Section 6.4. 2. USAR, Section 9.4.1. 3. NEDC-32988-A, Revision 2, Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants, December 2002.