March 30, 2010

TSTF-10-04
PROJ0753

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

SUBJECT: Transmittal of TSTF-522, Revision 0, "Revise Ventilation System Surveillance Requirements to Operate for 10 hours per Month"

Enclosed for NRC review is TSTF-522, "Revise Ventilation System Surveillance Requirements to Operate for 10 hours per Month."

Any NRC review fees associated with the review of TSTF-522 should be billed to the Boiling Water Reactor Owners' Group.

Should you have any questions, please do not hesitate to contact us.

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Enclosure

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Technical Specification Task Force
Improved Standard Technical Specifications Change Traveler

Revise Ventilation System Surveillance Requirements to Operate for 10 hours per Month

NUREGs Affected: ☑ 1430 ☑ 1431 ☑ 1432 ☑ 1433 ☑ 1434

Classification 1) Technical Change

Recommended for CLIIP?: Yes

Correction or Improvement: Improvement

NRC Fee Status: Not Exempt

Benefit: Reduces Testing

See attached.

Revision History

OG Revision 0 Revision Status: Closed

Revision Proposed by: Nine Mile Point Unit 1

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 05-May-09

Owners Group Comments
Directed to revise Traveler to reference Reg Guide 1.52, Rev. 3, which eliminates the 10 hour run for systems with and without heaters.

Owners Group Resolution: Rejected Date: 04-Dec-09

OG Revision 1 Revision Status: Active

Revision Proposed by: BWROG

Revision Description:
Revised markups and justification to eliminate 10 hour run for systems with and without heaters consistent with Regulatory Guide 1.52, Rev. 3.

Owners Group Review Information

Date Originated by OG: 02-Feb-10

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 05-Mar-10

TSTF Review Information

TSTF Received Date: 15-Mar-10 Date Distributed for Review 15-Mar-10

OG Review Completed: ☑ BWOG ☑ WOG ☑ CEOG ☑ BWROG

TSTF Comments:
(No Comments)

OG Revision 1 Revision Status: Active

TSTF Resolution: Approved Date: 30-Mar-10

NRC Review Information

NRC Received Date: 30-Mar-10

Affected Technical Specifications

SR 3.7.10.1	CREVS	NUREG(s)- 1430 Only
SR 3.7.10.1 Bases	CREVS	NUREG(s)- 1430 Only
SR 3.7.12.1	EVS	NUREG(s)- 1430 Only
SR 3.7.12.1 Bases	EVS	NUREG(s)- 1430 Only
SR 3.7.13.1	FSPVS	NUREG(s)- 1430 Only
SR 3.7.13.1 Bases	FSPVS	NUREG(s)- 1430 Only
Bkgnd 3.6.11 Bases	ICS (Atmospheric and Subatmospheric)	NUREG(s)- 1431 Only
SR 3.6.11.1	ICS (Atmospheric and Subatmospheric)	NUREG(s)- 1431 Only
SR 3.6.11.1 Bases	ICS (Atmospheric and Subatmospheric)	NUREG(s)- 1431 Only
Bkgnd 3.6.13 Bases	SBACS (Dual and Ice Condenser)	NUREG(s)- 1431 Only
SR 3.6.13.1	SBACS (Dual and Ice Condenser)	NUREG(s)- 1431 Only
SR 3.6.13.1 Bases	SBACS (Dual and Ice Condenser)	NUREG(s)- 1431 Only
Bkgnd 3.7.10 Bases	CREFS	NUREG(s)- 1431 Only
SR 3.7.10.1	CREFS	NUREG(s)- 1431 Only
SR 3.7.10.1 Bases	CREFS	NUREG(s)- 1431 Only
SR 3.7.12.1	ECCS PREACS	NUREG(s)- 1431 Only
SR 3.7.12.1 Bases	ECCS PREACS	NUREG(s)- 1431 Only
SR 3.7.13.1	FBACS	NUREG(s)- 1431 Only
SR 3.7.13.1 Bases	FBACS	NUREG(s)- 1431 Only

SR 3.7.14.1	PREACS	NUREG(s)- 1431 Only
SR 3.7.14.1 Bases	PREACS	NUREG(s)- 1431 Only
Bkgnd 3.6.8 Bases	SBEACS (Dual)	NUREG(s)- 1432 Only
SR 3.6.8.1	SBEACS (Dual)	NUREG(s)- 1432 Only
SR 3.6.8.1 Bases	SBEACS (Dual)	NUREG(s)- 1432 Only
Bkgnd 3.6.10 Bases	ICS (Atmospheric and Dual)	NUREG(s)- 1432 Only
SR 3.6.10.1	ICS (Atmospheric and Dual)	NUREG(s)- 1432 Only
SR 3.6.10.1 Bases	ICS (Atmospheric and Dual)	NUREG(s)- 1432 Only
Bkgnd 3.7.11 Bases	CREACS	NUREG(s)- 1432 Only
SR 3.7.11.1	CREACS	NUREG(s)- 1432 Only
SR 3.7.11.1 Bases	CREACS	NUREG(s)- 1432 Only
SR 3.7.13.1	ECCS PREACS	NUREG(s)- 1432 Only
SR 3.7.13.1 Bases	ECCS PREACS	NUREG(s)- 1432 Only
SR 3.7.14.1	FBACS	NUREG(s)- 1432 Only
SR 3.7.14.1 Bases	FBACS	NUREG(s)- 1432 Only
SR 3.7.15.1	PREACS	NUREG(s)- 1432 Only
SR 3.7.15.1 Bases	PREACS	NUREG(s)- 1432 Only
SR 3.6.4.3.1	SGT System	NUREG(s)- 1433 Only
SR 3.6.4.3.1 Bases	SGT System	NUREG(s)- 1433 Only
SR 3.7.4.1	[MCREC] System	NUREG(s)- 1433 Only
SR 3.7.4.1 Bases	[MCREC] System	NUREG(s)- 1433 Only
SR 3.6.4.3.1	SGT System	NUREG(s)- 1434 Only
SR 3.6.4.3.1 Bases	SGT System	NUREG(s)- 1434 Only
SR 3.7.3.1	[CRFA] System	NUREG(s)- 1434 Only
SR 3.7.3.1 Bases	[CRFA] System	NUREG(s)- 1434 Only

1.0 Description

The proposed change will revise the following Technical Specifications (TS):

- TS 3.7.10, "Control Room Emergency Ventilation System (CREVS)," TS 3.7.12, "Emergency Ventilation System (EVS)," and TS 3.7.13, "Fuel Storage Pool Ventilation System (FSPVS)," in the Improved Standard Technical Specifications (ISTS) for B&W plants (NUREG-1430);

- TS 3.6.11, "Iodine Cleanup System (ICS) (Atmospheric and Subatmospheric)," TS 3.6.13. "Shield Building Air Cleanup System (SBACS) (Dual and Ice Condenser)," TS 3.7.10, "Control Room Emergency Filtration System (CREFS)," TS 3.7.12, "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)," TS 3.7.13, "Fuel Building Air Cleanup System (FBACS)," and TS 3.7.14, "Penetration Room Exhaust Air Cleanup System (PREACS)," in the ISTS for Westinghouse plants (NUREG-1431);

- TS 3.6.8, "Shield Building Exhaust Air Cleanup System (SBEACS) (Dual)," TS 3.6.10, "Iodine Cleanup System (ICS) (Atmospheric and Dual)," TS 3.7.11 , "Control Room Emergency Air Conditioning System (CREACS)," TS 3.7.13, "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)," TS 3.7.14, "Fuel Building Air Cleanup System (FBACS)," and TS 3.7.15, "Penetration Room Exhaust Air Cleanup System (PREACS)," in the ISTS for Combustion Engineering (CE) plants (NUREG-1432); and

- TS 3.6.4.3, "Standby Gas Treatment (SGT) System," and TS 3.7.4, "[Main Control Room Environmental Control (MCREC)] System," in the ISTS for BWR/4 plants (NUREG-1433);

- TS 3.6.4.3, "Standby Gas Treatment (SGT) System," and TS 3.7.3, "[Control Room Fresh Air (CRFA)] System," in the ISTS for BWR/6 plants (NUREG-1434).

The proposed change revises the Surveillance Requirements which currently require operating the systems listed above with the heaters operating for a continuous 10 hour period every 31 days. The Surveillance Requirements are revised to require operation of the systems for 15 continuous minutes every 31 days. The proposed change is consistent with the guidance in Regulatory Guide (RG) 1.52, Revision 3, "Design, Inspection, and Testing Criteria for Air Filtration and Adsorption Units of Post-Accident Engineered-Safety-Feature Atmosphere Cleanup Systems In Light-Water-Cooled Nuclear Power Plants," June 2001 (Reference 1).

Attachment 1 contains a proposed Model Application for TSTF-522 which describes the information required to be submitted in the plant-specific License Amendment Request (LAR) when adopting this Traveler.

2.0 Proposed Change

The following changes are proposed:

NUREG-1430 (B&W)

- Surveillance Requirement (SR) 3.7.10.1 is revised from "Operate each CREVS train for [≥ 10 continuous hours with the heaters operating or (for system without heaters) ≥ 15 minutes]," to "Operate each CREVS train for ≥ 15 continuous minutes [with the heaters operating]."

- SR 3.7.12.1 is revised from "Operate each EVS train for [≥ 10 continuous hours with the heaters operating or (for system without heaters) ≥ 15 minutes]," to "Operate each EVS train for ≥ 15 continuous minutes [with the heaters operating]."

- SR 3.7.13.1 is revised from "Operate each FSPVS train for [≥ 10 continuous hours with the heaters operating or (for system without heaters) ≥ 15 minutes]," to "Operate each FSPVS train for ≥ 15 continuous minutes [with the heaters operating]."

NUREG-1431 (Westinghouse)

- SR 3.6.11.1 is revised from "Operate each ICS train for [≥ 10 continuous hours with heaters operating or (for system without heaters) ≥ 15 minutes]," to "Operate each ICS train for ≥ 15 continuous minutes [with heaters operating]."

- SR 3.6.13.1 is revised from "Operate each SBACS train for [≥ 10 continuous hours with heaters operating or (for system without heaters) ≥ 15 minutes]," to "Operate each SBACS train for ≥ 15 continuous minutes [with heaters operating]."

- SR 3.7.10.1 is revised from "Operate each CREFS train for [≥ 10 continuous hours with the heaters operating or (for system without heaters) ≥ 15 minutes]," to "Operate each CREFS train for ≥ 15 continuous minutes [with the heaters operating]."

- SR 3.7.12.1 is revised from "Operate each ECCS PREACS train for [≥ 10 continuous hours with the heaters operating or (for system without heaters) ≥ 15 minutes]," to "Operate each ECCS PREACS train for ≥ 15 continuous minutes [with the heaters operating]."

- SR 3.7.13.1 is revised from "Operate each FBACS train for [≥ 10 continuous hours with the heaters operating or (for system without heaters) ≥ 15 minutes]," to "Operate each FBACS train for ≥ 15 continuous minutes [with the heaters operating]."

- SR 3.7.14.1 is revised from "Operate each PREACS train for [≥ 10 continuous hours with heaters operating or (for system without heaters) ≥ 15 minutes]," to "Operate each PREACS train for ≥ 15 continuous minutes [with heaters operating]."

NUREG-1432 (CE)

- SR 3.6.8.1 is revised from "Operate each SBEACS train for [≥ 10 continuous hours with the heaters operating or (for system without heaters) ≥ 15 minutes]," to "Operate each SBEACS train for ≥ 15 continuous minutes [with the heaters operating]."

- SR 3.6.10.1 is revised from "Operate each ICS train for [≥ 10 continuous hours with heaters operating or (for system without heaters) ≥ 15 minutes]," to "Operate each ICS train for ≥ 15 continuous minutes [with heaters operating]."

- SR 3.7.11.1 is revised from "Operate each CREACS train for [≥ 10 continuous hours with heaters operating or (for system without heaters) ≥ 15 minutes]," to "Operate each CREACS train for ≥ 15 continuous minutes [with heaters operating]."

- SR 3.7.13.1 is revised from "Operate each ECCS PREACS train for [≥ 10 continuous hours with the heater operating or (for system without heaters) ≥ 15 minutes]," to "Operate each ECCS PREACS train for ≥ 15 continuous minutes [with the heater operating]."

- SR 3.7.14.1 is revised from "Operate each FBACS train for [≥ 10 continuous hours with the heaters operating or (for system without heaters) ≥ 15 minutes]," to "Operate each FBACS train for ≥ 15 continuous minutes [with the heaters operating]."

- SR 3.7.15.1 is revised from "Operate each PREACS train for [≥ 10 continuous hours with the heater operating or (for system without heaters) ≥ 15 minutes]," to "Operate each PREACS train for ≥ 15 continuous minutes [with the heater operating]."

NUREG-1433 (BWR/4)

- SR 3.6.4.3.1, is revised from "Operate each SGT subsystem for ≥ [10] continuous hours [with heaters operating]" to "Operate each SGT subsystem for ≥ 15 continuous minutes [with heaters operating]."

- SR 3.7.4.1, is revised from "Operate each [MCREC] subsystem for [≥ 10 continuous hours with heaters operating or (for systems without heaters) ≥ 15 minutes]," to "Operate each [MCREC] subsystem for ≥ 15 continuous minutes [with heaters operating]."

NUREG_1434 (BWR/6)

- SR 3.6.4.3.1, is revised from "Operate each SGT subsystem for ≥ [10] continuous hours [with heaters operating]" to "Operate each SGT subsystem for ≥ 15 continuous minutes [with heaters operating]."

- SR 3.7.3.1, is revised from "Operate each [CRFA] subsystem for [≥ 10 continuous hours with heaters operating or (for systems without heaters) ≥ 15 minutes]," to

"Operate each [CRFA] subsystem for ≥ 15 continuous minutes [with heaters operating]."

The Bases for each of the Surveillance Requirements are changed to reflect the revised requirements.

3.0 Background

System Descriptions

The Westinghouse and CE ICS is provided to reduce the concentration of fission products released to the containment atmosphere following a postulated accident. The ICS would function together with the Containment Spray and Cooling systems following a Design Basis Accident (DBA) to reduce the potential release of radioactive material, principally iodine, from the containment to the environment. The ICS consists of two 100% capacity, separate, independent, and redundant trains. Each train includes a heater, [cooling coils,] a prefilter, a demister, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of radioiodines, and a fan. Ductwork, valves and/or dampers, and instrumentation also form part of the system. The demisters function to reduce the moisture content of the airstream. A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case of failure in sections of the main HEPA filter bank. The upstream HEPA filter and the charcoal adsorber section are credited in the analysis. The system initiates filtered recirculation of the containment atmosphere following receipt of a safety injection signal.

The Westinghouse SBACS and CE SBEACS are required to ensure that radioactive materials that leak from the primary containment into the shield building (secondary containment) following a Design Basis Accident (DBA) are filtered and adsorbed prior to exhausting to the environment. The containment has a secondary containment called the shield building, which is a concrete structure that surrounds the steel primary containment vessel. Between the containment vessel and the shield building inner wall is an annular space that collects any containment leakage that may occur following a loss of coolant accident (LOCA). This space also allows for periodic inspection of the outer surface of the steel containment vessel. The SBACS and SBEACS establish a negative pressure in the annulus between the shield building and the steel containment vessel. Filters in the system then control the release of radioactive contaminants to the environment. Shield building OPERABILITY is required to ensure retention of primary containment leakage and proper operation of the SBACS.

The Westinghouse SBACS and CE SBEACS each consist of two separate and redundant trains. Each train includes a heater, [cooling coils,] a prefilter, moisture separators, a HEPA filter, an activated charcoal adsorber section for removal of radioiodines, and a fan. Ductwork, valves and/or dampers, and instrumentation also form part of the system. The moisture separators function to reduce the moisture content of the airstream. A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case of failure of the main HEPA filter bank. Only the upstream HEPA filter and the charcoal adsorber section are credited in the analysis. The system initiates and

maintains a negative air pressure in the shield building by means of filtered exhaust ventilation of the shield building following receipt of a safety injection (SI) signal. The prefilters remove large particles in the air, and the moisture separators remove entrained water droplets present, to prevent excessive loading of the HEPA filters and charcoal absorbers. Heaters may be included to reduce the relative humidity of the airstream on systems that operate in high humidity.

The Westinghouse and CE PREACS filter air from the penetration area between containment and the Auxiliary Building. The PREACS consists of two independent and redundant trains. Each train consists of a heater, a prefilter or demister, a HEPA filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, and instrumentation, as well as demisters, functioning to reduce the relative humidity of the air stream, also form part of the system. A second bank of HEPA filters, which follows the adsorber section, collects carbon fines and provides backup in case of failure of the main HEPA filter bank. The downstream HEPA filter, although not credited in the accident analysis, collects charcoal fines and serves as a backup should the upstream HEPA filter develop a leak. The system initiates filtered ventilation following receipt of a safety injection signal. The PREACS is a standby system, parts of which may also operate during normal unit operations. During emergency operations, the PREACS dampers are realigned and fans are started to initiate filtration. Upon receipt of the actuating signal(s), normal air discharges from the penetration room, the penetration room is isolated, and the stream of ventilation air discharges through the system filter trains. The prefilters remove any large particles in the air, as well as any entrained water droplets, to prevent excessive loading of the HEPA filters and charcoal adsorbers.

The B&W CREVS, Westinghouse CREFS, and CE CREACS provide a protected environment from which operators can control the unit following an uncontrolled release of radioactivity [, chemicals, or toxic gas].

The B&W CREVS consists of two independent, redundant, fan filter assemblies. Each filter train consists of a roughing filter, a HEPA filter, and a charcoal filter. The CREVS is an emergency system. Upon receipt of the activating signal(s), the normal control room ventilation system is automatically shut down and the CREVS can be manually started. The roughing filters and water condensing units remove any large particles in the air, and any entrained water droplets present, to prevent excessive loading of the HEPA and charcoal filters.

The Westinghouse CREFS and CE CREACS each consist of two independent, redundant trains that recirculate and filter the control room air. Each train consists of a prefilter or demister, a HEPA filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, and instrumentation also form part of the system, as well as demisters to remove water droplets from the air stream. A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case of failure of the main HEPA filter bank. The CREFS and CREACS are emergency systems, parts of which may also operate during normal unit operations in the standby mode of operation. Upon receipt of the

actuating signal(s), normal air supply to the control room is isolated, and the stream of ventilation air is recirculated through the system filter trains. The prefilters or demisters remove any large particles in the air, and any entrained water droplets present, to prevent excessive loading of the HEPA filters and charcoal adsorbers.

The BWR/4 [MCREC] System and the BWR/6 [CRFA] System provide a radiologically controlled environment from which the unit can be safely operated following a Design Basis Accident (DBA).

The safety related function of the BWR/4 [MCREC] and the BWR/6 [CRFA] systems includes two independent subsystems. Each subsystem typically consists of a demister, an electric heater, a prefilter, a HEPA filter, an activated charcoal adsorber section, a second HEPA filter, a booster fan, an air handling unit (excluding the condensing unit), and the associated ductwork and dampers. 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 BWR/4 [MCREC] and the BWR/6 [CRFA] systems are standby systems, parts of which also operate during normal unit operations to maintain the control room environment. Upon receipt of the initiation signal(s) (indicative of conditions that could result in radiation exposure to control room personnel), the [MCREC] and [CRFA] systems automatically switch to the isolation mode of operation to prevent infiltration of contaminated air into the control room. A system of dampers isolates the control room, and a part of the recirculated air is routed through either of the two filter subsystems.

The control room ventilation systems (CREVS, CREFS, CREACS, [MCREC] and [CRFA]) are designed to maintain the control room environment for 30 days of continuous occupancy after a Design Basis Accident (DBA) without exceeding the dose limits (i.e., 5 rem whole body dose or its equivalent to any part of the body or 5 rem total effective dose equivalent (TEDE)).

The B&W EVS, Westinghouse ECCS PREACS, and CE ECCS PREACS filter air from the area of the active Emergency Core Cooling System (ECCS) components during the recirculation phase of a loss of coolant accident (LOCA).

The B&W EVS consists of two independent, redundant trains. Each train consists of a prefilter, a HEPA filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, and instrumentation also form part of the system. The system initiates filtered ventilation of the Auxiliary Building negative pressure area following receipt of a safety features actuation signal (SFAS). The EVS is a standby system. During emergency operations, the EVS dampers are realigned, and fans are started to begin filtration. Upon receipt of the SFAS signal(s), normal air discharges from the negative pressure area are isolated, and the stream of ventilation air discharges through the system filter trains. The prefilters remove any large particles in the air, and any entrained water droplets present, to prevent excessive loading of the HEPA filters and charcoal adsorbers.

The Westinghouse and CE ECCS PREACS, in conjunction with other normally operating systems, also provide environmental control of temperature and humidity in the ECCS pump room area and the lower reaches of the Auxiliary Building. The ECCS PREACS consists of two independent and redundant trains. Each train consists of a heater, a prefilter or demister, a HEPA filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, and instrumentation also form part of the system, as well as demisters functioning to reduce the relative humidity of the air stream. A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case the main HEPA filter bank fails. The downstream HEPA filter is not credited in the accident analysis, but serves to collect charcoal fines, and to back up the upstream HEPA filter should it develop a leak. The system initiates filtered ventilation of the pump room following receipt of a safety injection (SI) signal or (for CE) coolant injection actuation signal. The ECCS PREACS is a standby system, aligned to bypass the system HEPA filters and charcoal adsorbers. During emergency operations, the ECCS PREACS dampers are realigned, and fans are started to begin filtration. Upon receipt of the actuating Engineered Safety Feature Actuation System signal(s), normal air discharges from the ECCS pump room isolate, and the stream of ventilation air discharges through the system filter trains. The prefilters or demisters remove any large particles in the air, and any entrained water droplets present, to prevent excessive loading of the HEPA filters and charcoal adsorbers.

The B&W FSPVS provides negative pressure in the fuel storage area, and filters airborne radioactive particulates from the area of the fuel pool following a fuel handling accident. The FSPVS consists of portions of the normal Fuel Handling Area Ventilation System (FHAVS), the station Emergency Ventilation System (EVS), ductwork bypasses, and dampers. The portion of the normal FHAVS used by the FSPVS consists of ducting between the spent fuel pool and the normal FHAVS exhaust fans or dampers, and redundant radiation detectors installed close to the suction end of the FHAVS exhaust fan ducting. The portion of the EVS used by the FSPVS consists of two independent, redundant trains. Each train consists of a heater, prefilter, or HEPA filter, activated charcoal adsorber section for removal of gaseous activity (principally iodines), and fan. Ductwork, valves or dampers, and instrumentation also form part of the system. Two isolation valves are installed in series in the ductwork between the FHAVS and the EVS to provide isolation of the EVS from the FHAVS on an Engineered Safety Feature actuation signal. These valves are opened prior to fuel handling operations [involving handling recently irradiated fuel]. A ductwork bypass with redundant dampers connects the FHAVS to the EVS.

The Westinghouse and CE FBACS filter airborne radioactive particulates from the area of the fuel pool following a fuel handling accident or loss of coolant accident (LOCA). The FBACS, in conjunction with other normally operating systems, also provides environmental control of temperature and humidity in the fuel pool area.

The Westinghouse and CE FBACS consists of two independent and redundant trains. Each train consists of a heater, a prefilter or demister, a HEPA filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan.

Ductwork, valves or dampers, and instrumentation also form part of the system, as well as demisters, functioning to reduce the relative humidity of the airstream. A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case the main HEPA filter bank fails. The downstream HEPA filter is not credited in the analysis, but serves to collect charcoal fines, and to back up the upstream HEPA filter should it develop a leak. The system initiates filtered ventilation of the fuel handling building following receipt of a high radiation signal. The FBACS is a standby system, parts of which may also be operated during normal plant operations. Upon receipt of the actuating signal, normal air discharges from the building, the fuel handling building is isolated, and the stream of ventilation air discharges through the system filter trains. The prefilters or demisters remove any large particles in the air, and any entrained water droplets present, to prevent excessive loading of the HEPA filters and charcoal adsorbers.

The BWR/4 and BWR/6 SGT System functions to ensure that radioactive materials that leak from the primary containment into the [secondary] containment following a Design Basis Accident (DBA) are filtered and adsorbed prior to exhausting to the environment.

The BWR/4 and BWR/6 SGT System typically consists of two fully redundant subsystems. Each charcoal filter subsystem typically consists of a demister or moisture separator, an electric heater, a prefilter, a HEPA filter, a charcoal adsorber, a second HEPA filter, and a centrifugal fan. The demister is provided to remove entrained water in the air, while the electric heater reduces the relative humidity of the airstream. The prefilter removes large particulate matter, while the HEPA filter removes fine particulate matter and protects the charcoal from fouling. The charcoal adsorber removes gaseous elemental iodine and organic iodides, and the final HEPA filter collects any carbon fines exhausted from the charcoal adsorber.

The BWR/4 and BWR/6 SGT System automatically starts and operates in response to actuation signals indicative of conditions or an accident that could require operation of the system. Following initiation, both charcoal filter train fans start. Upon verification that both subsystems are operating, the redundant subsystem is normally shut down.

Ventilation Filter Testing Description

NUREG-1430, NUREG-1431, and NUREG-1432 Specification 5.5.11, "Ventilation Filter Testing Program (VFTP);" and NUREG-1433 and NUREG-1434 Specification 5.5.8, "Ventilation Filter Testing Program (VFTP)," require that a program be established to implement required testing of ESF filter ventilation systems at the "frequencies specified in [Regulatory Guide], and in accordance with [Regulatory Guide 1.52, Revision 2, ASME N510-1989, and AG-1]."

RG 1.52, Revision 2, (Reference 2) Regulatory Position 4.d required that "Each ESF atmosphere cleanup train should be operated at least 10 hours per month, with the heaters on (if so equipped), in order to reduce the buildup of moisture on the adsorbers and HEPA filters." However, this was changed in RG 1.52, Revision 3. RG 1.52, Revision 3, Regulatory Position 6.1 states, "Each ESF atmosphere cleanup train should be operated

continuously for at least 15 minutes each month, with the heaters on (if so equipped), to justify the operability of the system and all its components."

The VFTP also requires that a laboratory test of a sample of the charcoal adsorber used in each of the Engineered Safety Features (ESF) systems be tested in accordance with ASTM D3803-1989. Generic Letter 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999, informed licensees that the use of any standard other than ASTM D3803-1989 to test the charcoal sample may result in an overestimation of the capability of the charcoal to adsorb radioiodine. As a result, the Standard Technical Specifications and most licensees' plant-specific Technical Specifications were revised to require testing in accordance with ASTM D3803-1989. The ASTM D3803-1989 Standard no longer requires operation for 10 hours utilizing the heaters.

4.0 Technical Analysis

The current ISTS requirements for operating the ESF ventilation trains monthly with the heaters on are based on RG 1.52, Revision 2, issued March 1978. In June 2001, the NRC issued RG 1.52, Revision 3, which revised the guidance for many of the ventilation system tests. This Traveler proposes changes to TS required testing which is consistent with RG 1.52, Revision 3, Section C, Regulatory Position 6.1 which states, "Each ESF atmosphere cleanup train should be operated continuously for at least 15 minutes each month, with the heaters on (if so equipped), to justify the operability of the system and all its components."

In their Value/Impact Statement published October 2000 with the draft of RG 1.52, Revision 3, (Reference 3) the NRC concluded that:

> *The guide would be useful to industry because it would notify them in a consistent manner of changes in ESF filter system testing and inspection provisions and would thus promote understanding of current NRC positions and prevent any unnecessary costs being applied to meet a provision no longer recommended by the NRC staff. None of the changes is expected to impose significant additional burdens on applicants or licensees. Some of the changes may relax certain guide positions but without compromise to safety, thereby reducing cost and effort. There would be no costs associated with the revised positions related to testing and inspection of new and used charcoal because the revised positions are in accordance with GL 99-02.*

This Traveler proposes to revise the ISTS to prevent any unnecessary costs being applied to meet a provision no longer recommended by the NRC staff'; specifically the monthly system testing will be reduced from 10 hours to 15 minutes. As discussed below, testing the heaters for 15 minutes is sufficient to verify that the safety function of the heaters is met and, thus, these changes do not reduce the safety of these systems.

The Ventilation Filter Test Program requires testing of charcoal adsorber in ESF systems to determine methyl iodide penetration when tested in accordance with

ASTM D3803-1989 at 30° C and 95% relative humidity. ASTM 03803-1989 is an accurate and realistic protocol for testing charcoal in safety-related ventilation systems. The use of the stringent relative humidity test parameter (95%), which contains a safety factor of greater than 2, assures that the charcoal efficiency assumed in the accident analysis is still valid at the end of an operating cycle. The test conditions also address moisture in the charcoal adsorber, which allows removal of the monthly operation of the ESF systems with the heaters in operation to remove moisture.

The required monthly 10 hour system operation utilizing the heaters was intended to remove moisture from the charcoal adsorber banks. Because the ASTM D3803-1989 Standard no longer requires this 10 hour operation utilizing the heaters, the 10 hour operation requirement is replaced with a 15 continuous minute operation requirement. For systems with installed heaters, this 15 minute continuous operation will include heater operation.

In addition, RG 1.52, Revision 3, Regulatory Position 4.9 states:

> *Adsorption units function most efficiently, with respect to retention of adsorbed iodine, at an input relative humidity of 70% or less. If the relative humidity of the air entering the ESF atmosphere cleanup system is expected to exceed 70% during accident situations, humidity control should be provided in the system design for controlling the relative humidity of the air entering the system.*
>
> *Humidity control promotes the long-term retention of radioiodine in the iodine adsorbers (minimizing the potential for early desorption and release) by maintaining the relative humidity at less than or equal to 70%. For secondary systems, humidity control may be provided by either safety-related heaters or an analysis that demonstrates that the air entering the adsorbers is maintained at less than or equal to 70% relative humidity under all design basis accident conditions.*
>
> *For primary systems, an electric heater should not be provided because its use inside containment could result in a spark and possible hydrogen explosion in the event of an accident. Systems with humidity control can perform laboratory testing of representative samples of activated carbon at a relative humidity of 70%, and systems without humidity control should perform laboratory testing of representative samples of activated carbon at a relative humidity of 95% (see Table 1 of this guide).*

The proposed Surveillance Requirements are sufficient to ensure that the affected ventilation systems are Operable and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action.

Plants which test ventilation system adsorption at a relative humidity of 95% do not require heaters for the ventilation system to perform its specified safety function consistent with Regulatory Position 4.9, given above. These plants may eliminate the

reference to heaters in the Surveillance Requirements and Bases. These plants may also subsequently pursue elimination of the heaters from the plant design under 10 CFR 50.59.

This change proposes to update the Surveillances in Chapter 3 of the Technical Specifications with respect to ESF ventilation system testing based on justification contained in RG 1.52, Revision 3, while all other aspects of the VFTP remain consistent with RG 1.52, Revision 2. The justification provided in RG 1.52, Revision 3, for eliminating system operation for 10 hours with heaters in operation is not dependent on any other aspect of Revision 3 of RG 1.52, but in recognition that the test does not demonstrate or maintain system Operability.

Most of the current Surveillances require operating the system for ≥ 10 continuous hours with the heaters operating for those systems equipped with heaters, and otherwise for ≥ 15 continuous minutes. The exceptions are the BWR/4 and BWR/6 SGT Surveillances, which require operation for ≥ 10 continuous hours regardless of whether the system is equipped with heaters. This is an error in the current Surveillances, as it is assumed that the system is equipped with heaters as described in the Background section of the Bases. The Bases for the Surveillances state, "Operation [with the heaters on (automatic heater cycling to maintain temperature)] for ≥ [10] continuous hours every 31 days eliminates moisture on the adsorbers and HEPA filters." This basis is the same as the basis for the other Surveillances revised by this proposed change, and the justification for revising the Surveillances is applicable to the SGT Surveillances.

5.0 Regulatory Analysis

5.1 No Significant Hazards Consideration

The proposed change will revise Technical Specification (TS) 3.7.10, "Control Room Emergency Ventilation System (CREVS)," TS 3.7.12, "Emergency Ventilation System (EVS)," and TS 3.7.13, "Fuel Storage Pool Ventilation System (FSPVS)," in the Improved Standard Technical Specifications (ISTS) for B&W plants (NUREG-1430); TS 3.6.11, "Iodine Cleanup System (ICS) (Atmospheric and Subatmospheric)," TS 3.6.13. "Shield Building Air Cleanup System (SBACS) (Dual and Ice Condenser)," TS 3.7.10, "Control Room Emergency Filtration System (CREFS)," TS 3.7.12, "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)," TS 3.7.13, "Fuel Building Air Cleanup System (FBACS)," and TS 3.7.14, "Penetration Room Exhaust Air Cleanup System (PREACS)," in the ISTS for Westinghouse plants (NUREG-1431); TS 3.6.8, "Shield Building Exhaust Air Cleanup System (SBEACS) (Dual)," TS 3.6.10, "Iodine Cleanup System (ICS) (Atmospheric and Dual)," TS 3.7.11 , "Control Room Emergency Air Conditioning System (CREACS)," TS 3.7.13, "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)," TS 3.7.14, "Fuel Building Air Cleanup System (FBACS)," and TS 3.7.15, "Penetration Room Exhaust Air Cleanup System (PREACS)," in the ISTS for Combustion Engineering (CE) plants (NUREG-1432); TS 3.6.4.3, "Standby Gas Treatment (SGT) System," and TS 3.7.4, "[Main Control Room Environmental Control (MCREC)] System," in the ISTS for BWR/4 plants (NUREG-1433); and TS 3.6.4.3, "Standby Gas Treatment (SGT) System," and TS 3.7.3, "[Control Room Fresh Air

(CRFA)] System," in the ISTS for BWR/6 plants (NUREG-1434) to revise the Surveillance Requirement to operate the B&W CREVS, EVS, and FSPVS; Westinghouse ICS, SBACS, CREFS, ECCS PREACS, FBACS and PREACS; CE SBEACS, ICS, CREACS, ECCS PREACS, FBACS, and PREACS; BWR/4 SGT System and [MCREC] System; and the BWR/6 SGT System and [CRFA] System with the electric heaters operating for a continuous 10 hour period every 31 days. The Surveillance Requirement is revised to require operation of the systems for 15 continuous minutes every 31 days.

The TSTF has evaluated whether or not a significant hazards consideration is involved with the proposed generic change by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No.

   The proposed change replaces an existing Surveillance Requirement to operate the B&W CREVS, EVS, and FSPVS; Westinghouse ICS, SBACS, CREFS, ECCS PREACS, FBACS and PREACS; CE SBEACS, ICS, CREACS, ECCS PREACS, FBACS, and PREACS; BWR/4 SGT System and [MCREC] System; and the BWR/6 SGT System and [CRFA] Systems equipped with electric heaters for a continuous 10 hour period every 31 days with a requirement to operate the systems for 15 continuous minutes with heaters operating, if needed.

   These systems are not accident initiators and therefore, these changes do not involve a significant increase in the probability of an accident. The proposed system and filter testing changes are consistent with current regulatory guidance for these systems and will continue to assure that these systems perform their design function which may include mitigating accidents. Thus the change does not involve a significant increase in the consequences of an accident.

   Therefore, it is concluded that this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No.

   The proposed change replaces an existing Surveillance Requirement to operate the B&W CREVS, EVS, and FSPVS; Westinghouse ICS, SBACS, CREFS, ECCS PREACS, FBACS and PREACS; CE SBEACS, ICS, CREACS, ECCS PREACS, FBACS, and PREACS; BWR/4 SGT System and [MCREC] System; and the BWR/6 SGT System and [CRFA] Systems equipped with electric heaters for a continuous 10 hour period every 31 days with a requirement to operate the systems for 15 continuous minutes with heaters operating, if needed.

The change proposed for these ventilation systems does not change any system operations or maintenance activities. Testing requirements will be revised and will continue to demonstrate that the Limiting Conditions for Operation are met and the system components are capable of performing their intended safety functions. The change does not create new failure modes or mechanisms and no new accident precursors are generated.

Therefore, it is concluded that this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

   Response: No.

   The proposed change replaces an existing Surveillance Requirement to operate the B&W CREVS, EVS, and FSPVS; Westinghouse ICS, SBACS, CREFS, ECCS PREACS, FBACS and PREACS; CE SBEACS, ICS, CREACS, ECCS PREACS, FBACS, and PREACS; BWR/4 SGT System and [MCREC] System; and the BWR/6 SGT System and [CRFA] Systems equipped with electric heaters for a continuous 10 hour period every 31 days with a requirement to operate the systems for 15 continuous minutes with heaters operating, if needed.

   The design basis for the ventilation systems' heaters is to heat the incoming air which reduces the relative humidity. The heater testing change proposed will continue to demonstrate that the heaters are capable of heating the air and will perform their design function. The proposed change is consistent with regulatory guidance.

   Therefore, it is concluded that this change does not involve a significant reduction in a margin of safety.

Based on the above, the TSTF concludes that the proposed change presents no significant hazards considerations under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

5.2 Applicable Regulatory Requirements/Criteria

Title 10 of the Code of Federal Regulations, Paragraph 50.36, requires Technical Specifications to contain Surveillances. It states, "Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met." The proposed change revises a Surveillance Requirement and the revised Surveillance Requirement continues to demonstrate that the necessary quality of the B&W CREVS, EVS, and FSPVS; Westinghouse ICS, SBACS, CREFS, ECCS PREACS, FBACS and PREACS; CE SBEACS, ICS, CREACS, ECCS PREACS, FBACS, and PREACS; BWR/4 SGT System and [MCREC] System; and the BWR/6 SGT System and [CRFA] System is maintained. Therefore, the proposed change is in compliance with 50.36.

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

5.3 Precedent

The NRC approved a similar change reducing the duration of the system and heater tests for the Shield Building Ventilation System, Auxiliary Building Special Ventilation System, and Spent Fuel Pool Special Ventilation System from 10 hours to 15 minutes for Prairie Island Nuclear Generating Plant, Units 1 and 2 in a Safety Evaluation dated July 18, 2008 (ADAMS Accession Number ML072010452) (Reference 4).

6.0 Environmental Consideration

A review has determined that the proposed change would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed change.

7.0 References

1. NRC Regulatory Guide 1.52, Design, Testing, and Maintenance Criteria for Post Accident Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants, Revision 3, issued June 2001.

2. NRC Regulatory Guide 1.52, Design, Testing, and Maintenance Criteria for Post Accident Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants, Revision 2, issued March 1978.

3. Value/Impact Statement attached to Draft Regulatory Guide DG-1102 (Proposed Revision 3 to Regulatory Guide 1.52), issued October 2000, ADAMS Accession No. ML003756180.

4, NRC Safety Evaluation, Prairie Island Nuclear Generating Plant, Units 1 and 2 – Issuance of Amendments RE: Adopting Provisions of Regulatory Guide (RG) 1.52 Revision 3 (TAC Nos. MD6120 and MD 6121), dated July 18, 2008 (ADAMS Accession No. ML072010452).

Attachment 1

Model Application for Adoption of TSTF-522

[DATE]

U. S. Nuclear Regular Commission
Document Control Desk
Washington, DC 20555

SUBJECT: PLANT NAME
DOCKET NO. 50-[xxx]
APPLICATION TO REVISE TECHNICAL SPECIFICATIONS TO ADOPT TSTF-522, "REVISE VENTILATION SYSTEM SURVEILLANCE REQUIREMENTS TO OPERATE FOR 10 HOURS PER MONTH," USING THE CONSOLIDATED LINE ITEM IMPROVEMENT PROCESS

Dear Sir or Madam:

In accordance with the provisions of 10 CFR 50.90, [LICENSEE] is submitting a request for an amendment to the Technical Specifications (TS) for [PLANT NAME, UNIT NOS.].

The proposed amendment would modify TS requirements to operate ventilation systems with charcoal filters for 10 hours each month in accordance with TSTF-522, Revision 0, "Revise Ventilation System Surveillance Requirements to Operate for 10 hours per Month."

Attachment 1 provides a description and assessment of the proposed changes, the requested confirmation of applicability, and plant-specific verifications. Attachment 2 provides the existing TS pages marked up to show the proposed changes. [Attachment 3 provides revised (clean) TS pages.] Attachment [4] provides existing TS Bases pages marked up to show the proposed changes.

[LICENSEE] requests approval of the proposed license amendment by [DATE], with the amendment being implemented [BY DATE OR WITHIN X DAYS].

In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being provided to the designated [STATE] Official.

[In accordance with 10 CFR 50.30(b), a license amendment request must be executed in a signed original under oath or affirmation. This can be accomplished by attaching a notarized affidavit confirming the signature authority of the signatory, or by including the following statement in the cover letter: "I declare under penalty of perjury that the foregoing is true and correct. Executed on (date)." The alternative statement is pursuant to 28 USC 1746. It does not require notarization.]

If you should have any questions regarding this submittal, please contact [NAME, TELEPHONE NUMBER].

Sincerely,

[Name, Title]

Attachments:
1. Description and Assessment
2. Proposed Technical Specification Changes (Mark-Up)
[3. Revised Technical Specification Pages]
[4]. Proposed Technical Specification Bases Changes (Mark-Up)

cc: NRC Project Manager
NRC Regional Office
NRC Resident Inspector
State Contact

ATTACHMENT 1 - DESCRIPTION AND ASSESSMENT

1.0 DESCRIPTION

The proposed change revises the Surveillance Requirements which currently require operating ventilation systems with the heaters operating for a continuous 10 hour period every 31 days. The Surveillance Requirements are revised to require operation of the systems for 15 continuous minutes every 31 days.

The proposed amendment is consistent with TSTF-522, Revision 0, "Revise Ventilation System Surveillance Requirements to Operate for 10 hours per Month."

2.0 ASSESSMENT

2.1 Applicability of Published Safety Evaluation

[LICENSEE] has reviewed the model safety evaluation dated [DATE] as part of the Federal Register Notice for Comment. This review included a review of the NRC staff's evaluation, as well as the information provided in TSTF-522. [As described in the subsequent paragraphs,][LICENSEE] has concluded that the justifications presented in the TSTF-522 proposal and the model safety evaluation prepared by the NRC staff are applicable to [PLANT, UNIT NOS.] and justify this amendment for the incorporation of the changes to the [PLANT] TS.

2.2 Optional Changes and Variations

[LICENSEE is not proposing any variations or deviations from the TS changes described in the TSTF-522, Revision 0, or the applicable parts of the NRC staff's model safety evaluation dated [DATE].] [LICENSEE is proposing the following variations from the TS changes described in the TSTF-522, Revision 0, or the applicable parts of the NRC staff's model safety evaluation dated [DATE].]

[The [PLANT] TS utilize different [numbering][and][titles] than the Standard Technical Specifications on which TSTF-522 was based. Specifically, [describe differences between the plant-specific TS numbering and/or titles and the TSTF-522 numbering and titles.] These differences are administrative and do not affect the applicability of TSTF-522 to the [PLANT] TS.]

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration Determination

[PLANT NAME, UNIT NOS.] requests adoption of an approved change to the standard technical specifications (STS) and plant specific technical specifications (TS), to revise Technical Specification (TS) 3.7.10, "Control Room Emergency Ventilation System (CREVS)," TS 3.7.12, "Emergency Ventilation System (EVS)," and TS 3.7.13, "Fuel Storage

Pool Ventilation System (FSPVS)," in the Improved Standard Technical Specifications (ISTS) for B&W plants (NUREG-1430); TS 3.6.11, "Iodine Cleanup System (ICS) (Atmospheric and Subatmospheric)," TS 3.6.13. "Shield Building Air Cleanup System (SBACS) (Dual and Ice Condenser)," TS 3.7.10, "Control Room Emergency Filtration System (CREFS)," TS 3.7.12, "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)," TS 3.7.13, "Fuel Building Air Cleanup System (FBACS)," and TS 3.7.14, "Penetration Room Exhaust Air Cleanup System (PREACS)," in the ISTS for Westinghouse plants (NUREG-1431); TS 3.6.8, "Shield Building Exhaust Air Cleanup System (SBEACS) (Dual)," TS 3.6.10, "Iodine Cleanup System (ICS) (Atmospheric and Dual)," TS 3.7.11 , "Control Room Emergency Air Conditioning System (CREACS)," TS 3.7.13, "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)," TS 3.7.14, "Fuel Building Air Cleanup System (FBACS)," and TS 3.7.15, "Penetration Room Exhaust Air Cleanup System (PREACS)," in the ISTS for Combustion Engineering (CE) plants (NUREG-1432); TS 3.6.4.3, "Standby Gas Treatment (SGT) System," and TS 3.7.4, "[Main Control Room Environmental Control (MCREC)] System," in the ISTS for BWR/4 plants (NUREG-1433); and TS 3.6.4.3, "Standby Gas Treatment (SGT) System," and TS 3.7.3, "[Control Room Fresh Air (CRFA)] System," in the ISTS for BWR/6 plants (NUREG-1434) to revise the Surveillance Requirement to operate the B&W CREVS, EVS, and FSPVS; Westinghouse ICS, SBACS, CREFS, ECCS PREACS, FBACS and PREACS; CE SBEACS, ICS, CREACS, ECCS PREACS, FBACS, and PREACS; BWR/4 SGT System and [MCREC] System; and the BWR/6 SGT System and [CRFA] System with the electric heaters operating for a continuous 10 hour period every 31 days. The Surveillance Requirement is revised to require operation of the systems for 15 continuous minutes every 31 days.

As required by 10 CFR 50.91(a), an analysis of the issue of no significant hazards consideration is presented below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No.

   The proposed change replaces an existing Surveillance Requirement to operate the B&W CREVS, EVS, and FSPVS; Westinghouse ICS, SBACS, CREFS, ECCS PREACS, FBACS and PREACS; CE SBEACS, ICS, CREACS, ECCS PREACS, FBACS, and PREACS; BWR/4 SGT System and [MCREC] System; and the BWR/6 SGT System and [CRFA] Systems equipped with electric heaters for a continuous 10 hour period every 31 days with a requirement to operate the systems for 15 continuous minutes with heaters operating, if needed.

   These systems are not accident initiators and therefore, these changes do not involve a significant increase in the probability of an accident. The proposed system and filter testing changes are consistent with current regulatory guidance for these systems and will continue to assure that these systems perform their design function which may include mitigating accidents. Thus the change does not involve a significant increase in the consequences of an accident.

Therefore, it is concluded that this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No.

   The proposed change replaces an existing Surveillance Requirement to operate the B&W CREVS, EVS, and FSPVS; Westinghouse ICS, SBACS, CREFS, ECCS PREACS, FBACS and PREACS; CE SBEACS, ICS, CREACS, ECCS PREACS, FBACS, and PREACS; BWR/4 SGT System and [MCREC] System; and the BWR/6 SGT System and [CRFA] Systems equipped with electric heaters for a continuous 10 hour period every 31 days with a requirement to operate the systems for 15 continuous minutes with heaters operating, if needed.

   The change proposed for these ventilation systems does not change any system operations or maintenance activities. Testing requirements will be revised and will continue to demonstrate that the Limiting Conditions for Operation are met and the system components are capable of performing their intended safety functions. The change does not create new failure modes or mechanisms and no new accident precursors are generated.

   Therefore, it is concluded that this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

   Response: No.

   The proposed change replaces an existing Surveillance Requirement to operate the B&W CREVS, EVS, and FSPVS; Westinghouse ICS, SBACS, CREFS, ECCS PREACS, FBACS and PREACS; CE SBEACS, ICS, CREACS, ECCS PREACS, FBACS, and PREACS; BWR/4 SGT System and [MCREC] System; and the BWR/6 SGT System and [CRFA] Systems equipped with electric heaters for a continuous 10 hour period every 31 days with a requirement to operate the systems for 15 continuous minutes with heaters operating, if needed.

   The design basis for the ventilation systems' heaters is to heat the incoming air which reduces the relative humidity. The heater testing change proposed will continue to demonstrate that the heaters are capable of heating the air and will perform their design function. The proposed change is consistent with regulatory guidance.

Therefore, it is concluded that this change does not involve a significant reduction in a margin of safety. Based on the above, [LICENSEE] concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

4.0 ENVIRONMENTAL EVALUATION

The proposed change would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed change.

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.	D.1 ----------NOTE---------- Place in emergency mode if automatic transfer to emergency mode inoperable. ----------	
	Place OPERABLE CREVS train in emergency mode.	Immediately
	OR	
	D.2 Suspend movement of [recently] irradiated fuel assemblies.	Immediately]
E. [Two CREVS trains inoperable during movement of [recently] irradiated fuel assemblies.	E.1 Suspend movement of [recently] irradiated fuel assemblies.	Immediately]
F. Two CREVS trains inoperable during MODE 1, 2, 3, or 4 for reasons other than Condition B.	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Operate each CREVS train for ~~[~~≥ ~~10~~ 15 continuous ~~hours~~ minutes [with the heaters operating]~~ or (for system without heaters) ≥ 15 minutes]~~.	31 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.12.1	Operate each EVS train for ~~[~~≥ ~~10~~ 15 continuous ~~hours~~ minutes [with the heaters operating]~~ or (for systems without heaters) ≥ 15 minutes]~~.	31 days
SR 3.7.12.2	Perform required EVS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]
SR 3.7.12.3	Verify each EVS train actuates on an actual or simulated actuation signal.	[18] months
SR 3.7.12.4	Verify one EVS train can maintain a pressure ≤ [ ] inches water gauge relative to atmospheric pressure during the [post accident] mode of operation at a flow rate of ≤ [3000] cfm.	[18] months on a STAGGERED TEST BASIS
SR 3.7.12.5	[Verify each EVS filter cooling bypass damper can be opened.	[18] months]

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, 3, or 4. OR Two FSPVs trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours]
D. Required Action and associated Completion Time of Condition A not met during movement of [recently] irradiated fuel assemblies in the fuel building.	D.1 Place OPERABLE FSPVS train in operation. OR D.2 Suspend movement of [recently] irradiated fuel assemblies in the fuel building.	Immediately Immediately
E. Two FSPVS trains inoperable during movement of [recently] irradiated fuel assemblies in the fuel building.	E.1 Suspend movement of [recently] irradiated fuel assemblies in the fuel building.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.13.1	[Operate each FSPVS train for ~~[~~≥ ~~10~~15 continuous ~~hours~~ minutes [with the heaters operating ~~or (for systems without heaters) ≥ 15 minutes~~].	31 days]

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.10.1

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not severe, testing each train once every month adequately checks this system. ~~Monthly heater operations dry out any moisture that has accumulated in the charcoal because of humidity in the ambient air. [Systems with heaters must be operated for ≥ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥ 15 minutes to demonstrate the function of the system.]~~Operation [with the heaters on] for ≥ 15 continuous minutes demonstrates OPERABILITY of the system. Periodic operation ensures that [heater failure,] blockage, fan or motor failure, or excessive vibration can be detected for corrective action. The 31 day Frequency is based on the known reliability of the equipment and the two train redundancy available.

SR 3.7.10.2

This SR verifies that the required CREVS testing is performed in accordance with the [Ventilation Filter Testing Program (VFTP)]. The [VFTP] includes testing HEPA filter performance, charcoal absorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal. Specific test frequencies and additional information are discussed in detail in the [VFTP].

SR 3.7.10.3

This SR verifies that [each CREVS train starts] [or the control room isolates] and operates on an actual or simulated actuation signal. The Frequency of [18] months is consistent with that specified in Reference 3.

SR 3.7.10.4

This SR verifies the integrity of the control room enclosure and the assumed inleakage rates of the potentially contaminated air. The control room positive pressure, with respect to potentially contaminated adjacent areas, is periodically tested to verify that the CREVS is functioning properly. During the emergency mode of operation, the CREVS is designed to pressurize the control room ≥ [0.125] inches water gauge positive pressure, with respect to adjacent areas, to prevent unfiltered inleakage. The CREVS is designed to maintain this positive pressure with one train at a flow rate of ≤ [3300] cfm. This value includes [300] cfm of outside air. The Frequency of [18] months on a STAGGERED TEST BASIS is consistent with industry practice and other filtration SRs.

BASES

ACTIONS (continued)

C.1 and C.2

If the EVS train or the Auxiliary Building negative pressure area boundary cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 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.

SURVEILLANCE REQUIREMENTS

SR 3.7.12.1

Standby systems should be checked periodically to ensure that they function properly. Since the environment and normal operating conditions on this system are not severe, testing each train once a month provides an adequate check on this system. ~~Monthly heater operations dry out any moisture that may have accumulated in the charcoal from humidity in the ambient air. [Systems with heaters must be operated ≥ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥ 15 minutes to demonstrate the function of the system.]~~ Operation [with the heaters on] for ≥ 15 continuous minutes demonstrates OPERABILITY of the system. Periodic operation ensures that [heater failure,] blockage, fan or motor failure, or excessive vibration can be detected for corrective action. The 31 day Frequency is based on known reliability of equipment and the two train redundancy available.

SR 3.7.12.2

This SR verifies that the required EVS 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 frequencies and additional information are discussed in detail in the [VFTP].

SR 3.7.12.3

This SR verifies that each EVS train starts and operates on an actual or simulated actuation signal. The [18] month Frequency is consistent with that specified in Reference 5.

BASES

ACTIONS (continued)

E.1

When two trains of the FSPVS are inoperable during movement of [recently] irradiated fuel assemblies in the fuel building, the unit must be placed in a condition in which the LCO does not apply. This LCO involves immediately suspending movement of [recently] irradiated fuel assemblies in the fuel building. This does not preclude the movement of fuel to a safe position.

SURVEILLANCE REQUIREMENTS

[SR 3.7.13.1

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not severe, testing each train once every month provides an adequate check on this system. ~~Monthly heater operation dries out any moisture accumulated in the charcoal from humidity in the ambient air. [Systems with heaters must be operated for ≥ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥ 15 minutes to demonstrate the function of the system.]~~Operation [with the heaters on] for ≥ 15 continuous minutes demonstrates OPERABILITY of the system. Periodic operation ensures that [heater failure,] blockage, fan or motor failure, or excessive vibration can be detected for corrective action. The 31 day Frequency is based on the known reliability of the equipment and the two train redundancy available.]

[SR 3.7.13.2

This SR verifies that the required FSPVS 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 frequencies and additional information are discussed in detail in the [VFTP].]

[SR 3.7.13.3

This SR verifies that each FSPVS train starts and operates on an actual or simulated actuation signal. The 18 month Frequency is consistent with that specified in Reference 6.]

3.6 CONTAINMENT SYSTEMS

3.6.11 Iodine Cleanup System (ICS) (Atmospheric and Subatmospheric)

LCO 3.6.11 Two ICS trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ICS train inoperable.	A.1 Restore ICS train to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.11.1	Operate each ICS train for [≥ ~~10~~15 continuous ~~hours~~minutes [with heaters operating~~ or (for systems without heaters) ≥ 15 minutes~~].	31 days
SR 3.6.11.2	Perform required ICS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.11.3	Verify each ICS train actuates on an actual or simulated actuation signal.	[18] months

3.6 CONTAINMENT SYSTEMS

3.6.13 Shield Building Air Cleanup System (SBACS) (Dual and Ice Condenser)

LCO 3.6.13 Two SBACS trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SBACS train inoperable.	A.1 Restore SBACS train to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.13.1	Operate each SBACS train for [≥ ~~10~~15 continuous ~~hours~~minutes [with heaters operating ~~or (for systems without heaters) ≥ 15 minutes~~].	31 days
SR 3.6.13.2	Perform required SBACS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.13.3	Verify each SBACS train actuates on an actual or simulated actuation signal.	[18] months

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A not met [in MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies.	D.1 ----------NOTE---------- [Place in toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable.] ---------- Place OPERABLE CREFS train in emergency mode.	Immediately
	OR	
	D.2 Suspend movement of [recently] irradiated fuel assemblies.	Immediately
E. Two CREFS trains inoperable [in MODE 5 or 6, or] during movement of [recently] irradiate fuel assemblies.	E.1 Suspend movement of [recently] irradiated fuel assemblies.	Immediately
F. Two CREFS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Operate each CREFS train for [≥ ~~10~~15 continuous ~~hours~~minutes [with the heaters operating~~ or (for systems without heaters) ≥ 15 minutes~~].	31 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.12.1	Operate each ECCS PREACS train for [≥ ~~10~~15 continuous ~~hours~~minutes [with the heaters operating~~ or (for systems without heaters) ≥ 15 minutes~~].	31 days
SR 3.7.12.2	Perform required ECCS PREACS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]
SR 3.7.12.3	Verify each ECCS PREACS train actuates on an actual or simulated actuation signal.	[18] months
SR 3.7.12.4	Verify one ECCS PREACS train can maintain a pressure ≤ [-0.125] inches water gauge relative to atmospheric pressure during the [post accident] mode of operation at a flow rate of ≤ [3000] cfm.	[18] months on a STAGGERED TEST BASIS
SR 3.7.12.5	[Verify each ECCS PREACS filter bypass damper can be closed.	[18] months]

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, 3, or 4. OR Two FBACS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours]
D. Required Action and associated Completion Time [of Condition A] not met during movement of [recently] irradiated fuel assemblies in the fuel building.	D.1 Place OPERABLE FBACS train in operation. OR D.2 Suspend movement of [recently] irradiated fuel assemblies in the fuel building.	Immediately Immediately
E. Two FBACS trains inoperable during movement of [recently] irradiated fuel assemblies in the fuel building.	E.1 Suspend movement of [recently] irradiated fuel assemblies in the fuel building.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.13.1	Operate each FBACS train for [≥ ~~10~~15 continuous ~~hours~~minutes [with the heaters operating ~~or (for systems without heaters) ≥ 15 minutes~~].	31 days

3.7 PLANT SYSTEMS

3.7.14 Penetration Room Exhaust Air Cleanup System (PREACS)

LCO 3.7.14 Two PREACS trains shall be OPERABLE.

----------NOTE----------
The penetration room boundary may be opened intermittently under administrative control.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One PREACS train inoperable.	A.1 Restore PREACS train to OPERABLE status.	7 days
B. Two PREACS trains inoperable due to inoperable penetration room boundary.	B.1 Restore penetration room boundary to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.14.1	Operate each PREACS train for [≥ ~~10~~15 continuous ~~hours~~minutes [with heaters operating~~ or (for systems without heaters) ≥ 15 minutes~~].	31 days

B 3.6 CONTAINMENT SYSTEMS

B 3.6.11 Iodine Cleanup System (ICS) (Atmospheric and Subatmospheric)

BASES

BACKGROUND

The ICS is provided per GDC 41, "Containment Atmosphere Cleanup," GDC 42, "Inspection of Containment Atmosphere Cleanup Systems," and GDC 43, "Testing of Containment Atmosphere Cleanup Systems" (Ref. 1), to reduce the concentration of fission products released to the containment atmosphere following a postulated accident. The ICS would function together with the Containment Spray and Cooling systems following a Design Basis Accident (DBA) to reduce the potential release of radioactive material, principally iodine, from the containment to the environment.

The ICS consists of two 100% capacity, separate, independent, and redundant trains. Each train includes a heater, [cooling coils,] a prefilter, a demister, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of radioiodines, and a fan. Ductwork, valves and/or dampers, and instrumentation also form part of the system. The demisters function to reduce the moisture content of the airstream. A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case of failure in sections of the main HEPA filter bank. The upstream HEPA filter and the charcoal adsorber section are credited in the analysis. The system initiates filtered recirculation of the containment atmosphere following receipt of a safety injection signal. The system design is described in Reference 2.

The demister is included for moisture (free water) removal from the gas stream. Heaters are used to heat the gas stream, which lowers the relative humidity. ~~Continuous operation of each train for at least 10 hours per month with the heaters on reduces moisture buildup on the HEPA filters and adsorbers.~~ Both the demister and heater are important to the effectiveness of the charcoal adsorbers.

The primary purpose of the heaters is to ensure that the relative humidity of the airstream entering the charcoal adsorbers is maintained below 70%, which is consistent with the assigned iodine and iodide removal efficiencies as per Regulatory Guide 1.52 (Ref. 3).

Two ICS trains are provided to meet the requirement for separation, independence, and redundancy. Each ICS train is powered from a separate Engineered Safety Features bus and is provided with a separate power panel and control panel. [Essential service water is required to supply cooling water to the cooling coils.]

BASES

ACTIONS

A.1

With one ICS train inoperable, the inoperable train must be restored to OPERABLE status within 7 days. The components in this degraded condition are capable of providing 100% of the iodine removal needs after a DBA. The 7 day Completion Time is based on consideration of such factors as:

a. The availability of the OPERABLE redundant ICS train,

b. The fact that, even with no ICS train in operation, almost the same amount of iodine would be removed from the containment atmosphere through absorption by the Containment Spray System, and

c. The fact that the Completion Time is adequate to make most repairs.

B.1 and B.2

If the ICS train cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.11.1

Operating each ICS train for ≥ 15 minutes ensures that all trains are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. ~~For systems with heaters, operation with the heaters on (automatic heater cycling to maintain temperature) for ≥ 10 continuous hours eliminates moisture on the adsorbers and HEPA filters. Experience from filter testing at operating units indicates that the 10 hour period is adequate for moisture elimination on the adsorbers and HEPA filters.~~ The 31 day Frequency was developed considering the known reliability of fan motors and controls, the two train redundancy available, and the iodine removal capability of the Containment Spray System independent of the ICS.

BASES

BACKGROUND (continued)

The prefilters remove large particles in the air, and the moisture separators remove entrained water droplets present, to prevent excessive loading of the HEPA filters and charcoal absorbers. Heaters may be included to reduce the relative humidity of the airstream on systems that operate in high humidity. ~~Continuous operation of each train, for at least 10 hours per month, with heaters on, reduces moisture buildup on their HEPA filters and adsorbers.~~ [The cooling coils cool the air to keep the charcoal beds from becoming too hot due to absorption of fission product.]

During normal operation, the Shield Building Cooling System is aligned to bypass the SBACS's HEPA filters and charcoal adsorbers. For SBACS operation following a DBA, however, the bypass dampers automatically reposition to draw the air through the filters and adsorbers.

The SBACS reduces the radioactive content in the shield building atmosphere following a DBA. Loss of the SBACS could cause site boundary doses, in the event of a DBA, to exceed the values given in the licensing basis.

APPLICABLE SAFETY ANALYSES

The SBACS design basis is established by the consequences of the limiting DBA, which is a LOCA. The accident analysis (Ref. 3) assumes that only one train of the SBACS is functional due to a single failure that disables the other train. The accident analysis accounts for the reduction in airborne radioactive material provided by the remaining one train of this filtration system. The amount of fission products available for release from containment is determined for a LOCA.

The modeled SBACS actuation in the safety analyses is based upon a worst case response time following an SI initiated at the limiting setpoint. The total response time, from exceeding the signal setpoint to attaining the negative pressure of [0.5] inch water gauge in the shield building, is [22 seconds]. This response time is composed of signal delay, diesel generator startup and sequencing time, system startup time, and time for the system to attain the required pressure after starting.

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

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.13.1

Operating each SBACS train for ≥ 15 minutes ensures that all trains are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. ~~For systems with heaters, operation with the heaters on (automatic heater cycling to maintain temperature) for ≥ 10 continuous hours eliminates moisture on the adsorbers and HEPA filters. Experience from filter testing at operating units indicates that the 10 hour period is adequate for moisture elimination on the adsorbers and HEPA filters.~~ The 31 day Frequency was developed in consideration of the known reliability of fan motors and controls, the two train redundancy available, and the iodine removal capability of the Containment Spray System.

SR 3.6.13.2

This SR verifies that the required SBACS filter 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 frequencies and additional information are discussed in detail in the VFTP.

SR 3.6.13.3

The automatic startup ensures that each SBACS train responds properly. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore the Frequency was concluded to be acceptable from a reliability standpoint. Furthermore, the SR interval was developed considering that the SBACS equipment OPERABILITY is demonstrated at a 31 day Frequency by SR 3.6.13.1.

B 3.7 PLANT SYSTEMS

B 3.7.10 Control Room Emergency Filtration System (CREFS)

BASES

BACKGROUND

The CREFS provides a protected environment from which operators can control the unit following an uncontrolled release of radioactivity[, chemicals, or toxic gas].

The CREFS consists of two independent, redundant trains that recirculate and filter the control room air. Each train consists of a prefilter or demister, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, and instrumentation also form part of the system, as well as demisters to remove water droplets from the air stream. A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case of failure of the main HEPA filter bank.

The CREFS is an emergency system, parts of which may also operate during normal unit operations in the standby mode of operation. Upon receipt of the actuating signal(s), normal air supply to the control room is isolated, and the stream of ventilation air is recirculated through the system filter trains. The prefilters or demisters remove any large particles in the air, and any entrained water droplets present, to prevent excessive loading of the HEPA filters and charcoal adsorbers. ~~Continuous operation of each train for at least 10 hours per month, with the heaters on, reduces moisture buildup on the HEPA filters and adsorbers.~~ Both the demister and heater are important to the effectiveness of the charcoal adsorbers.

Actuation of the CREFS places the system in either of two separate states (emergency radiation state or toxic gas isolation state) of the emergency mode of operation, depending on the initiation signal. Actuation of the system to the emergency radiation state of the emergency mode of operation, closes the unfiltered outside air intake and unfiltered exhaust dampers, and aligns the system for recirculation of the control room air through the redundant trains of HEPA and the charcoal filters. The emergency radiation state also initiates pressurization and filtered ventilation of the air supply to the control room.

BASES

ACTIONS (continued)

E.1

[In MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies, with two CREFS trains inoperable, action must be taken immediately to suspend activities that could result in a release of radioactivity that might enter the control room. This places the unit in a condition that minimizes accident risk. This does not preclude the movement of fuel to a safe position.

F.1

If both CREFS trains are inoperable in MODE 1, 2, 3, or 4 for reasons other than an inoperable control room boundary (i.e., Condition B), the CREFS may not be capable of performing the intended function and the unit is in a condition outside the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.

SURVEILLANCE REQUIREMENTS

SR 3.7.10.1

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not too severe, testing each train once every month provides an adequate check of this system. ~~Monthly heater operations dry out any moisture accumulated in the charcoal from humidity in the ambient air. [Systems with heaters must be operated for ≥10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥15 minutes to demonstrate the function of the system.]~~Operation [with the heaters on] for ≥ 15 continuous minutes demonstrates OPERABILITY of the system. Periodic operation ensures that [heater failure,] blockage, fan or motor failure, or excessive vibration can be detected for corrective action. The 31 day Frequency is based on the reliability of the equipment and the two train redundancy availability.

SR 3.7.10.2

This SR verifies that the required CREFS testing is performed in accordance with the [Ventilation Filter Testing Program (VFTP)]. The [VFTP] includes testing the performance of the HEPA filter, charcoal adsorber efficiency, minimum flow rate, and the physical properties of the activated charcoal. Specific test Frequencies and additional information are discussed in detail in the [VFTP].

BASES

ACTIONS (continued)

If the ECCS pump room boundary is inoperable, the ECCS PREACS trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE ECCS pump room boundary within 24 hours. During the period that the ECCS pump room boundary is inoperable, appropriate compensatory measures [consistent with the intent, as applicable, of GDC 19, 60, 64 and 10 CFR Part 100] should be utilized to protect plant personnel from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and 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 ECCS pump room boundary.

C.1 and C.2

If the ECCS PREACS train or ECCS pump room boundary cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 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.

SURVEILLANCE REQUIREMENTS

SR 3.7.12.1

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not severe, testing each train once a month provides an adequate check on this system. ~~Monthly heater operations dry out any moisture that may have accumulated in the charcoal from humidity in the ambient air. [Systems with heaters must be operated ≥10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥15 minutes to demonstrate the function of the system.]~~Operation [with the heaters on] for ≥ 15 continuous minutes demonstrates OPERABILITY of the system. Periodic operation ensures that [heater failure,] blockage, fan or motor failure, or excessive vibration can be detected for corrective action. The 31 day Frequency is based on the known reliability of equipment and the two train redundancy available.

BASES

ACTIONS (continued)

E.1

When two trains of the FBACS are inoperable during movement of [recently] irradiated fuel assemblies in the fuel building, action must be taken to place the unit in a condition in which the LCO does not apply. Action must be taken immediately to suspend movement of [recently] irradiated fuel assemblies in the fuel building. This does not preclude the movement of fuel to a safe position.

SURVEILLANCE REQUIREMENTS

SR 3.7.13.1

Standby systems should be checked periodically to ensure that they function properly. As the environmental and normal operating conditions on this system are not severe, testing each train once every month provides an adequate check on this system.

~~Monthly heater operation dries out any moisture accumulated in the charcoal from humidity in the ambient air. [Systems with heaters must be operated for ≥10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥15 minutes to demonstrate the function of the system.]~~Operation [with the heaters on] for ≥ 15 continuous minutes demonstrates OPERABILITY of the system. Periodic operation ensures that [heater failure,] blockage, fan or motor failure, or excessive vibration can be detected for corrective action. The 31 day Frequency is based on the known reliability of the equipment and the two train redundancy available.

[SR 3.7.13.2

This SR verifies that the required FBACS 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 frequencies and additional information are discussed in detail in the [VFTP].]

[SR 3.7.13.3

This SR verifies that each FBACS train starts and operates on an actual or simulated actuation signal. The [18] month Frequency is consistent with Reference 6.]

BASES

ACTIONS (continued)

C.1 and C.2

If the inoperable train or penetration room boundary cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The 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.

SURVEILLANCE REQUIREMENTS

SR 3.7.14.1

Standby systems should be checked periodically to ensure that they function properly. As the environmental and normal operating conditions on this system are not severe, testing each train once every month provides an adequate check on this system. ~~Monthly heater operation dries out any moisture that may have accumulated in the charcoal as a result of humidity in the ambient air. [Systems with heaters must be operated for ≥10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥15 minutes to demonstrate the function of the system.]~~Operation [with the heaters on] for ≥ 15 continuous minutes demonstrates OPERABILITY of the system. Periodic operation ensures that [heater failure,] blockage, fan or motor failure, or excessive vibration can be detected for corrective action. The 31 day Frequency is based on the known reliability of equipment and the two train redundancy available.

SR 3.7.14.2

This SR verifies that the required PREACS 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 frequencies and additional information are discussed in detail in the [VFTP].

[SR 3.7.14.3

This SR verifies that each PREACS starts and operates on an actual or simulated actuation signal. The [18] month Frequency is consistent with that specified in Reference 5.]

3.6 CONTAINMENT SYSTEMS

3.6.8 Shield Building Exhaust Air Cleanup System (SBEACS) (Dual)

LCO 3.6.8 Two SBEACS trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SBEACS train inoperable.	A.1 Restore train to OPERABLE status.	7 days
B. Required Action and Associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.8.1	Operate each SBEACS train for [≥ ~~10~~15 continuous ~~hours~~minutes [with the heaters operating ~~or (for systems without heaters) ≥ 15 minutes~~].	31 days
SR 3.6.8.2	Perform required SBEACS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.8.3	Verify each SBEACS train actuates on an actual or simulated actuation signal.	[18] months

3.6 CONTAINMENT SYSTEMS

3.6.10 Iodine Cleanup System (ICS) (Atmospheric and Dual)

LCO 3.6.10 [Two] ICS trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ICS train inoperable.	A.1 Restore ICS train to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.10.1	Operate each ICS train for [≥ ~~10~~15 continuous ~~hours~~minutes [with heaters operating~~ or (for systems without heaters) ≥ 15 minutes~~].	31 days
SR 3.6.10.2	Perform required ICS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.10.3	Verify each ICS train actuates on an actual or simulated actuation signal.	[18] months

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A not met [in MODES 5 and 6, or] during movement of [recently] irradiated fuel assemblies.	D.1 ----------NOTE---------- Place in toxic gas protection mode if automatic transfer to toxic gas mode inoperable. ----------	
	Place OPERABLE CREACS train in emergency radiation protection mode.	Immediately
	OR	
	D.2 Suspend movement of [recently] irradiated fuel assemblies.	Immediately
E. Two CREACS trains inoperable [in MODES 5 and 6, or] during movement of [recently] irradiated fuel assemblies.	E.1 Suspend movement of [recently] irradiated fuel assemblies.	Immediately
F. Two CREACS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Operate each CREACS train for [≥ ~~10~~15 continuous ~~hours~~minutes [with heaters operating ~~or (for systems without heaters) ≥ 15 minutes~~].	31 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.13.1	Operate each ECCS PREACS train for ~~[~~≥ ~~10~~25 continuous ~~hours~~minutes [with the heater operating~~ or (for systems without heaters) ≥ 15 minutes~~].	31 days
SR 3.7.13.2	Perform required ECCS PREACS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]
SR 3.7.13.3	Verify each ECCS PREACS train actuates on an actual or simulated actuation signal.	[18] months
SR 3.7.13.4	Verify one ECCS PREACS train can maintain a negative pressure ≥ [ ] inches water gauge relative to atmospheric pressure during the [post accident] mode of operation at a flow rate of ≤ [20,000] cfm.	[18] months on a STAGGERED TEST BASIS
SR 3.7.13.5	[Verify each ECCS PREACS filter bypass damper can be opened.	[18] months]

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, 3, or 4. OR Two FBACS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours]
D. Required Action and Associated Completion Time [of Condition A] not met during movement of [recently] irradiated fuel assemblies in the fuel building.	D.1 Place OPERABLE FBACS train in operation. OR D.2 Suspend movement of [recently] irradiated fuel assemblies in the fuel building.	Immediately Immediately
E. Two FBACS trains inoperable during movement of [recently] irradiated fuel assemblies in the fuel building.	E.1 Suspend movement of [recently] irradiated fuel assemblies in the fuel building.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.14.1	Operate each FBACS train for [≥ ~~10~~15 continuous ~~hours~~minutes [with the heaters operating ~~or (for systems without heaters) ≥ 15 minutes~~].	31 days

3.7 PLANT SYSTEMS

3.7.15 Penetration Room Exhaust Air Cleanup System (PREACS)

LCO 3.7.15 Two PREACS trains shall be OPERABLE.

----------NOTE----------
The penetration room boundary may be opened intermittently under administrative control.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One PREACS train inoperable.	A.1 Restore PREACS train to OPERABLE status.	7 days
B. Two PREACS trains inoperable due to inoperable penetration room boundary.	B.1 Restore penetration room boundary to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.15.1	Operate each PREACS train for [≥ ~~10~~15 continuous ~~hours~~minutes [with the heater operating~~ or (for systems without heaters) ≥ 15 minutes~~].	31 days

BASES

BACKGROUND (continued)

systems operating in high humidity. ~~Continuous operation of each train for at least 10 hours per month with heaters on reduces moisture buildup on the HEPA filters and adsorbers.~~ [The cooling coils cool the air to keep the charcoal beds from becoming too hot due to absorption of fission products.]

During normal operation, the Shield Building Cooling System is aligned to bypass the SBEACS HEPA filters and charcoal adsorbers. For SBEACS operation following a DBA, however, the bypass dampers automatically reposition to draw the air through the filters and adsorbers.

The SBEACS reduces the radioactive content in the shield building atmosphere following a DBA. Loss of the SBEACS could cause site boundary doses, in the event of a DBA, to exceed the values given in the licensing basis.

APPLICABLE SAFETY ANALYSES

The SBEACS design basis is established by the consequences of the limiting DBA, which is a LOCA. The accident analysis (Ref. 3) assumes that only one train of the SBEACS is functional due to a single failure that disables the other train. The accident analysis accounts for the reduction in airborne radioactive material provided by the remaining one train of this filtration system. The amount of fission products available for release from containment is determined for a LOCA.

The modeled SBEACS actuation in the safety analysis is based on a worst case response time associated with exceeding an SIAS. The total response time from exceeding the signal setpoint to attaining the negative pressure of [≥ 0.25] inch water gauge in the shield building is [1 minute]. This response time is composed of signal delay, diesel generator startup and sequencing time, system startup time, and time for the system to attain the required pressure after starting.

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

LCO

In the event of a DBA, one SBEACS train is required to provide the minimum particulate iodine removal assumed in the safety analysis. Two trains of the SBEACS must be OPERABLE to ensure that at least one train will operate, assuming that the other train is disabled by a single active failure.

BASES

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could lead to fission product release to containment that leaks to the shield building. The large break LOCA, on which this system's design is based, is a full power event. Less severe LOCAs and leakage still require the system to be OPERABLE throughout these MODES. The probability and severity of a LOCA decrease as core power and Reactor Coolant System pressure decrease. With the reactor shut down, the probability of release of radioactivity resulting from such an accident is low.

In MODES 5 and 6, the probability and consequences of a DBA are low due to the pressure and temperature limitations in these MODES. Under these conditions, the Filtration System is not required to be OPERABLE.

ACTIONS

A.1

With one SBEACS train inoperable, the inoperable train must be restored to OPERABLE status within 7 days. The components in this degraded condition are capable of providing 100% of the iodine removal needs after a DBA. The 7 day Completion Time is based on consideration of such factors as the availability of the OPERABLE redundant SBEACS train and the low probability of a DBA occurring during this period.

B.1 and B.2

If the SBEACS train cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.8.1

Operating each SBEACS train for ≥ 15 minutes ensures that all trains are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. ~~For systems with heaters, operation with the heaters on (automatic heater cycling to maintain temperature) for ≥ 10 continuous hours eliminates moisture on the adsorbers and HEPA filters.~~ Experience from filter testing at operating units indicates that the 10 hour period is adequate for moisture

BASES

SURVEILLANCE REQUIREMENTS (continued)

elimination on the adsorbers and HEPA filters. The 31 day Frequency was developed considering the known reliability of fan motors and controls, the two train redundancy available, and the iodine removal capability of the Containment Spray System.

SR 3.6.8.2

This SR verifies that the required SBEACS filter testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The VFTP includes testing of 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 3.6.8.3

The automatic startup ensures that each SBEACS train responds properly. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. Furthermore, the SR interval was developed considering that the SBEACS equipment OPERABILITY is demonstrated at a 31 day Frequency by SR 3.6.8.1.

[SR 3.6.8.4

The filter bypass dampers are tested to verify OPERABILITY. The dampers are in the bypass position during normal operation and must reposition for accident operation to draw air through the filters. The [18] month Frequency is considered to be acceptable based on the damper reliability and design, the mild environmental conditions in the vicinity of the dampers, and the fact that operating experience has shown that the dampers usually pass the Surveillance when performed at the [18] month Frequency.]

B 3.6 CONTAINMENT SYSTEMS

B 3.6.10 Iodine Cleanup System (ICS) (Atmospheric and Dual)

BASES

BACKGROUND

The ICS is provided per GDC 41, "Containment Atmosphere Cleanup," GDC 42, "Inspection of Containment Atmosphere Cleanup Systems," and GDC 43, "Testing of Containment Atmosphere Cleanup Systems" (Ref. 1), to reduce the concentration of fission products released to the containment atmosphere following a postulated accident. The ICS would function together with the Containment Spray and Cooling systems following a Design Basis Accident (DBA) to reduce the potential release of radioactive material, principally iodine, from the containment to the environment.

The ICS consists of two 100% capacity separate, independent, and redundant trains. Each train includes a heater, [cooling coils,] a prefilter, a moisture separator, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of radioiodines, and a fan. Ductwork, valves and/or dampers, and instrumentation also form part of the system. The moisture separators function to reduce the moisture content of the airstream. A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case of failure of the main HEPA filter bank. Only the upstream HEPA filter and the charcoal adsorber section are credited in the analysis. The system initiates filtered recirculation of the containment atmosphere following receipt of a containment isolation actuation signal. The system design is described in Reference 2.

The primary purpose of the heaters is to ensure that the relative humidity of the airstream entering the charcoal adsorbers is maintained below 70%, which is consistent with the assigned iodine and iodide removal efficiencies as per Regulatory Guide 1.52 (Ref. 3).

The moisture separator is included for moisture (free water) removal from the gas stream. Heaters are used to heat the gas stream, which lowers the relative humidity. ~~Continuous operation of each train for at least 10 hours per month with the heaters on reduces moisture buildup on the HEPA filters and adsorbers.~~ Both the moisture separator and heater are important to the effectiveness of the charcoal adsorbers.

Two ICS trains are provided to meet the requirement for separation, independence, and redundancy. Each ICS train is powered from a separate Engineered Safety Features bus and is provided with a separate power panel and control panel. [Service water is required to supply cooling water to the cooling coils.]

BASES

ACTIONS (continued)

b. The fact that, even with no ICS train in operation, almost the same amount of iodine would be removed from the containment atmosphere through absorption by the Containment Spray System, and

c. The fact that the Completion Time is adequate to make most repairs.

B.1 and B.2

If the ICS train cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.10.1

Operating each ICS train for ≥ 15 minutes ensures that all trains are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. ~~For systems with heaters, operation with the heaters on (automatic heater cycling to maintain temperature) for ≥ 10 continuous hours eliminates moisture on the adsorbers and HEPA filters. Experience from filter testing at operating units indicates that the 10 hour period is adequate for moisture elimination on the adsorbers and HEPA filters.~~ The 31 day Frequency was developed considering the known reliability of fan motors and controls, the two train redundancy available, and the iodine removal capability of the Containment Spray System independent of the ICS.

SR 3.6.10.2

This SR verifies that the required ICS filter 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 frequencies and additional information are discussed in detail in the VFTP.

B 3.7 PLANT SYSTEMS

B 3.7.11 Control Room Emergency Air Cleanup System (CREACS)

BASES

BACKGROUND

The CREACS provides a protected environment from which operators can control the unit following an uncontrolled release of radioactivity, [chemicals, or toxic gas].

The CREACS consists of two independent, redundant trains that recirculate and filter the control room air. Each train consists of a prefilter and demister, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodine), and a fan. Ductwork, valves or dampers, and instrumentation also form part of the system, as do demisters that remove water droplets from the air stream. A second bank of HEPA filters follows the adsorber section to collect carbon fines, and to back up the main HEPA filter bank if it fails.

The CREACS is an emergency system, part of which may also operate during normal unit operations in the standby mode of operation. Upon receipt of the actuating signal(s), normal air supply to the control room is isolated, and the stream of ventilation air is recirculated through the filter trains of the system. The prefilters and demisters remove any large particles in the air, and any entrained water droplets present to prevent excessive loading of the HEPA filters and charcoal adsorbers. ~~Continuous operation of each train for at least 10 hours per month with the heaters on reduces moisture buildup on the HEPA filters and adsorbers.~~ Both the demister and heater are important to the effectiveness of the charcoal adsorbers.

Actuation of the CREACS places the system into either of two separate states of the emergency mode of operation, depending on the initiation signal. Actuation of the system to the emergency radiation state of the emergency mode of operation closes the unfiltered outside air intake and unfiltered exhaust dampers, and aligns the system for recirculation of control room air through the redundant trains of HEPA and charcoal filters. The emergency radiation state initiates pressurization and filtered ventilation of the air supply to the control room.

Outside air is filtered, [diluted with building air from the electrical equipment and cable spreading rooms,] and then added to the air being recirculated from the control room. Pressurization of the control room prevents infiltration of unfiltered air from the surrounding areas of the

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.11.1

Standby systems should be checked periodically to ensure that they function properly. Since the environment and normal operating conditions on this system are not severe, testing each train once every month provides an adequate check on this system.

~~Monthly heater operations dry out any moisture accumulated in the charcoal from humidity in the ambient air. [Systems with heaters must be operated for ≥ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥ 15 minutes to demonstrate the function of the system.]~~Operation [with the heaters on] for ≥ 15 continuous minutes demonstrates operability of the system. Periodic operation ensures that [heater failure,] blockage, fan or motor failure, or excessive vibration can be detected for corrective action. The 31 day Frequency is based on the known reliability of the equipment, and the two train redundancy available.

SR 3.7.11.2

This SR verifies that the required CREACS 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 frequencies and additional information are discussed in detail in the [VFTP].

SR 3.7.11.3

This SR verifies each CREACS train starts and operates on an actual or simulated actuation signal. The Frequency of [18] months is consistent with that specified in Reference 3.

SR 3.7.11.4

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 CREACS. During the emergency radiation state of the emergency mode of operation, the CREACS is designed to pressurize the control room ≥ [0.125] inches water gauge positive pressure with respect to adjacent areas in order to prevent unfiltered inleakage. The CREACS is designed to maintain this positive pressure with one train at an emergency

BASES

ACTIONS (continued)

If the ECCS pump room boundary is inoperable, the ECCS PREACS trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE ECCS pump room boundary within 24 hours. During the period that the ECCS pump room boundary is inoperable, appropriate compensatory measures [consistent with the intent, as applicable, of GDC 19, 60, 64 and 10 CFR Part 100] should be utilized to protect plant personnel from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and 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 ECCS pump room boundary.

C.1 and C.2

If the ECCS PREACS train or ECCS pump room boundary cannot be restored to OPERABLE status within the associated Completion Time, the unit must be in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 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.

SURVEILLANCE REQUIREMENTS

SR 3.7.13.1

Standby systems should be checked periodically to ensure that they function properly. Since the environment and normal operating conditions on this system are not severe, testing each train once a month provides an adequate check on this system. ~~Monthly heater operations dry out any moisture that may have accumulated in the charcoal from humidity in the ambient air. [Systems with heaters must be operated for ≥ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥ 15 minutes to demonstrate the function of the system.]~~Operation [with the heaters on] for ≥ 15 continuous minutes demonstrates OPERABILITY of the system. Periodic operation ensures that [heater failure,] blockage, fan or motor failure, or excessive vibration can be detected for corrective action. The 31 day Frequency is based on the known reliability of equipment, and the two train redundancy available.

BASES

ACTIONS (continued)

E.1

When two trains of the FBACS are inoperable during movement of [recently] irradiated fuel assemblies in the fuel building, action must be taken to place the unit in a condition in which the LCO does not apply. This LCO involves immediately suspending movement of [recently] irradiated fuel assemblies in the fuel building. This does not preclude the movement of fuel to a safe position.

SURVEILLANCE REQUIREMENTS

SR 3.7.14.1

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not severe, testing each train once every month provides an adequate check on this system. ~~Monthly heater operation dries out any moisture accumulated in the charcoal from humidity in the ambient air. [Systems with heaters must be operated for ≥ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥ 15 minutes to demonstrate the function of the system.]~~Operation [with the heaters on] for ≥ 15 continuous minutes demonstrates OPERABILITY of the system. Periodic operation ensures that [heater failure,] blockage, fan or motor failure, or excessive vibration can be detected for corrective action. The 31 day Frequency is based on the known reliability of the equipment and the two train redundancy available.

SR 3.7.14.2

This SR verifies the performance of FBACS filter testing 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 frequencies and additional information are discussed in detail in the [VFTP].

[SR 3.7.14.3

This SR verifies that each FBACS train starts and operates on an actual or simulated actuation signal. The [18] month Frequency is consistent with that specified in Reference 6.]

BASES

ACTIONS (continued)

C.1 and C.2

If the inoperable PREACS train or penetration room boundary cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 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.

SURVEILLANCE REQUIREMENTS

SR 3.7.15.1

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not severe, testing each train once every month provides an adequate check on this system.

~~Monthly heater operation dries out any moisture that may have accumulated in the charcoal as a result of humidity in the ambient air. [Systems with heaters must be operated for ≥ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥ 15 minutes to demonstrate the function of the system.]~~Operation [with the heaters on] for ≥ 15 continuous minutes demonstrates OPERABILITY of the system. Periodic operation ensures that [heater failure,] blockage, fan or motor failure, or excessive vibration can be detected for corrective action. The 31 day Frequency is based on the known reliability of the equipment and the two train redundancy available.

SR 3.7.15.2

This SR verifies the performance of PREACS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)]. The [VFTP] includes testing the performance of the HEPA filter, 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 3.7.15.3

This SR verifies that each PREACS train starts and operates on an actual or simulated actuation signal. The [18] month Frequency is consistent with that specified in Reference 4.]

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	C.2.2 Initiate action to suspend OPDRVs.	Immediately
D. Two SGT subsystems inoperable in MODE 1, 2, or 3.	D.1 Enter LCO 3.0.3.	Immediately
E. Two SGT subsystems inoperable during movement of [recently] irradiated fuel assemblies in the [secondary] containment or during OPDRVs.	E.1 ----------NOTE---------- LCO 3.0.3 is not applicable. ----------	
	Suspend movement of [recently] irradiated fuel assemblies in [secondary] containment.	Immediately
	AND	
	E.2 Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.3.1	Operate each SGT subsystem for ≥ ~~[10]~~15 continuous ~~hours~~ minutes [with heaters operating].	31 days
SR 3.6.4.3.2	Perform required SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.3.3	Verify each SGT subsystem actuates on an actual or simulated initiation signal.	[18] months

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two [MCREC] subsystems inoperable during movement of [recently] irradiated fuel assemblies in the [secondary] containment or during OPDRVs.	----------NOTE---------- LCO 3.0.3 is not applicable. ----------	
	F.1 Suspend movement of [recently] irradiated fuel assemblies in the [secondary] containment.	Immediately
	AND	
	F.2 Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Operate each [MCREC] subsystem for [≥ ~~10~~15 continuous ~~hours~~ minutes [with the heaters operating ~~or (for systems without heaters) ≥ 15 minutes~~].	31 days
SR 3.7.4.2	Perform required [MCREC] filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]
SR 3.7.4.3	Verify each [MCREC] subsystem actuates on an actual or simulated initiation signal.	[18] months
SR 3.7.4.4	[Verify each [MCREC] subsystem can maintain a positive pressure of ≥ [0.1] inches water gauge relative to the [turbine building] during the [pressurization] mode of operation at a flow rate of ≤ [400] cfm.	[18] months on a STAGGERED TEST BASIS]

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.3.1

Operating each SGT subsystem for ≥ 15~~[10]~~ continuous minutes ~~hours~~ ensures that [both] subsystems are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. ~~Operation [with the heaters on (automatic heater cycling to maintain temperature)] for ≥ [10] continuous hours every 31 days eliminates moisture on the adsorbers and HEPA filters.~~ 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 3.6.4.3.2

This SR verifies that the required SGT filter 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 frequencies and additional information are discussed in detail in the VFTP.

SR 3.6.4.3.3

This SR verifies that each SGT subsystem starts on receipt of an actual or simulated initiation signal. 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 [18] month Frequency. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.6.2.6 overlaps this SR to provide complete testing of the safety function. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

[SR 3.6.4.3.4

This SR verifies that the filter cooler bypass damper can be opened and the fan started. This ensures that the ventilation mode of SGT System operation is available. 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 [18] month Frequency, which is based on the refueling cycle. Therefore, the Frequency was found to be acceptable from a reliability standpoint.]

BASES

ACTIONS (continued)

During movement of [recently] irradiated fuel assemblies in the [secondary] containment or during OPDRVs, with two [MCREC] subsystems inoperable, action must be taken immediately to 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 [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, actions must be initiated immediately to suspend OPDVRs 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 3.7.4.1

This SR verifies that a subsystem in a standby mode starts on demand and continues to operate. 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. ~~Monthly heater operation dries out any moisture that has accumulated in the charcoal as a result of humidity in the ambient air. [Systems with heaters must be operated for ≥ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥ 15 minutes to demonstrate the function of the system.]~~Operation [with the heaters on] for ≥ 15 continuous minutes demonstrates OPERABILITY of the system. Periodic operation ensures that [heater failure,] blockage, fan or motor failure, or excessive vibration can be detected for corrective action. Furthermore, the 31 day Frequency is based on the known reliability of the equipment and the two subsystem redundancy available.

SR 3.7.4.2

This SR verifies that the required [MCREC] 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 frequencies and additional information are discussed in detail in the [VFTP].

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	C.2.2 Initiate action to suspend OPDRVs.	Immediately
D. Two SGT subsystems inoperable in MODE 1, 2, or 3.	D.1 Enter LCO 3.0.3.	Immediately
E. Two SGT subsystems inoperable during movement of [recently] irradiated fuel assemblies in the [primary or secondary containment] or during OPDRVs.	E.1 ----------NOTE---------- LCO 3.0.3 is not applicable. ---------- Suspend movement of [recently] irradiated fuel assemblies in the [primary and secondary containment].	Immediately
	AND	
	E.2 Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.3.1	Operate each SGT subsystem for ≥ ~~[10]~~ 15 continuous ~~hours~~ minutes [with heaters operating].	31 days
SR 3.6.4.3.2	Perform required SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.3.3	Verify each SGT subsystem actuates on an actual or simulated initiation signal.	[18] months

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two [CRFA] subsystems inoperable during movement of [recently] irradiated fuel assemblies in the [primary or secondary containment] or during OPDRVs.	----------NOTE---------- LCO 3.0.3 is not applicable. ----------	
	F.1 Suspend movement of [recently] irradiated fuel assemblies in the [primary and secondary containment].	Immediately
	AND	
	F.2 Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Operate each [CRFA] subsystem for ~~[~~≥ ~~10~~15 continuous ~~hours~~minutes [with the heaters operating ~~or (for systems without heaters) ≥ 15 minutes~~].	31 days
SR 3.7.3.2	Perform required [CRFA] filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]
SR 3.7.3.3	Verify each [CRFA] subsystem actuates on an actual or simulated initiation signal.	[18] months
SR 3.7.3.4	[Verify each [CRFA] subsystem can maintain a positive pressure of ≥ [ ] inches water gauge relative to [adjacent buildings] during the [isolation] mode of operation at a flow rate of ≤ [ ] cfm.	[18] months on a STAGGERED TEST BASIS]

BASES

ACTIONS (continued)

Required Action E.1 has been modified by a Note stating that LCO 3.0.3 is not applicable. If moving [recently] irradiated fuel assemblies while in MODE 4 or 5, LCO 3.0.3 would not specify any action. If moving [recently] irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, in either case, inability to suspend movement of [recently] irradiated fuel assemblies would not be sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.3.1

Operating each SGT subsystem for ≥ 15~~[10]~~ continuous minutes ~~hours~~ ensures that both subsystems are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. ~~Operation [with the heaters on (automatic heater cycling to maintain temperature)] for ≥ [10] continuous hours every 31 days eliminates moisture on the adsorbers and HEPA filters.~~ 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 3.6.4.3.2

This SR verifies that the required SGT filter 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). Specified test frequencies and additional information are discussed in detail in the VFTP.

SR 3.6.4.3.3

This SR requires verification that each SGT subsystem starts upon receipt of an actual or simulated initiation signal. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.6.2.5 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 these components usually pass the Surveillance when performed at the [18] month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

BASES

ACTIONS (continued)

E.1

If both [CRFA] subsystems are inoperable in MODE 1, 2, or 3 for reasons other than an inoperable control room boundary (i.e., Condition B), 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, LCO 3.0.3 must be entered immediately.

F.1 and F.2

The Required Actions of Condition F 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 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 or secondary containment] or during OPDRVs, with two [CRFA] subsystems inoperable, action must be taken immediately to 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 and 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, 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 a subsystem in a standby mode starts on demand and continues to operate. 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. ~~Monthly heater operation dries out any moisture accumulated in the charcoal from humidity in the ambient air. [Systems with heaters must be operated for ≥ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for~~

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~≥ 15 minutes to demonstrate the function of the system.]~~Operation [with the heaters on] for ≥ 15 continuous minutes demonstrates OPERABILITY of the system. Periodic operation ensures that [heater failure,] blockage, fan or motor failure, or excessive vibration can be detected for corrective action. Furthermore, the 31 day Frequency is based on the known reliability of the equipment and the two subsystem redundancy available.

SR 3.7.3.2

This SR verifies that the required CRFA 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 frequencies and additional information are discussed in detail in the [VFTP].

SR 3.7.3.3

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. The [18] month Frequency is specified in Reference 5.

SR 3.7.3.4

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 [CRFA] System. During the emergency mode of operation, the [CRFA] System is designed to slightly pressurize the control room to [0.1] inches water gauge positive pressure with respect to adjacent areas to prevent unfiltered inleakage. The [CRFA] System is designed to maintain this positive pressure at a flow rate of [500] cfm to the control room in the isolation mode. The Frequency of [18] months on a STAGGERED TEST BASIS is consistent with industry practice and other filtration system SRs.