Technical Specifications Task Force
Improved Standard Technical Specifications Change Traveler

Expand the Applicability of the Surveillance Frequency Control Program (SFCP)

NUREGs Affected: ☑ 1430 ☑ 1431 ☑ 1432 ☑ 1433 ☑ 1434 ☐ 2194

Classification: 1) Technical Change

Recommended for CLIIP?: Yes

Correction or Improvement: Improvement

NRC Fee Status: Not Exempt

Benefit: Allows Less Stringent Testing

Changes Marked on ISTS Rev: 5.0

PWROG RISD & PA (if applicable): PA-LSC-1908

See attached.

Revision History

OG Revision 0 Revision Status: Active

Revision Proposed by:

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 11-Aug-22

Owners Group Comments:
Based on the Owners Group comments, the following changes were made to the traveler:
Addressed licensees that have not adopted TSTF-545 and eliminated the Section 5.5 IST program.
Addressed licensees that have not adopted TSTF-289 to separate MSIV closure time and actuation signal testing in SR 3.7.2.1 and SR 3.7.2.2.
Addressed plant-specific SRs that reference the IST in the SR or Frequency.
Addressed application to non-ITS plants.
Addressed SRs with an SFCP Frequency but with IST referenced in the Bases.
Addressed SR 3.0.2 and SR 3.0.3 applicability statements in Section 5.5.
Addressed plant-specific differences in the Ventilation Filter Testing Program.
Addressed plant-specific differences in the Diesel Fuel Oil Testing Program.
Expanded the model application to include optional text for each of the plant-specific variations.

Owners Group Resolution: Approved Date: 31-Aug-22

TSTF Review Information

TSTF Received Date: 27-Sep-22 Date Distributed for Review: 27-Sep-22

TSTF Comments:

(No Comments)

TSTF Resolution: Approved Date: 21-Oct-22

Affected Technical Specifications

1.1 Definitions

5.5.2	Primary Coolant Sources Outside Containment	
SR 3.4.10.1	Pressurizer Safety Valves	NUREG(s)- 1430 1431 1432 Only
SR 3.4.10.1 Bases	Pressurizer Safety Valves	NUREG(s)- 1430 1431 1432 Only
SR 3.4.14.1	RCS PIV Leakage	NUREG(s)- 1430 1431 1432 Only
SR 3.4.14.1 Bases	RCS PIV Leakage	NUREG(s)- 1430 1431 1432 Only
SR 3.5.2.4	ECCS - Operating	NUREG(s)- 1430 1431 1432 Only
SR 3.5.2.4 Bases	ECCS - Operating	NUREG(s)- 1430 1431 1432 Only
SR 3.6.3.5	Containment Isolation Valves	NUREG(s)- 1430 1431 1432 Only
SR 3.6.3.5 Bases	Containment Isolation Valves	NUREG(s)- 1430 1431 1432 Only
LCO 3.7.1 Bases	MSSVs	NUREG(s)- 1430 1431 1432 Only
SR 3.7.1.1	MSSVs	NUREG(s)- 1430 1431 1432 Only
SR 3.7.1.1 Bases	MSSVs	NUREG(s)- 1430 1431 1432 Only
SR 3.7.2.1	MSIVs	NUREG(s)- 1430 1431 1432 Only
SR 3.7.2.1 Bases	MSIVs	NUREG(s)- 1430 1431 1432 Only
5.5.10	Ventilation Filter Testing Program (VFTP)	NUREG(s)- 1430 1431 1432 Only
5.5.12	Diesel Fuel Oil Testing Program	NUREG(s)- 1430 1431 1432 Only
5.5.17	Control Room Envelope (CRE) Habitability Program	NUREG(s)- 1430 1431 1432 Only
5.5.19	Surveillance Frequency Control Program	NUREG(s)- 1430 1431 1432 Only
SR 3.6.6.5	Containment Spray and Cooling Systems	NUREG(s)- 1430 Only
SR 3.6.6.5 Bases	Containment Spray and Cooling Systems	NUREG(s)- 1430 Only
SR 3.7.3.1	[MFSVs, MFCVs, and Associated SFCVs]	NUREG(s)- 1430 Only
SR 3.7.3.1 Bases	[MFSVs, MFCVs, and Associated SFCVs]	NUREG(s)- 1430 Only
SR 3.7.5.2	EFW System	NUREG(s)- 1430 Only
SR 3.7.5.2 Bases	EFW System	NUREG(s)- 1430 Only
SR 3.9.3.2 Bases	Containment Penetrations	NUREG(s)- 1430 Only
SR 3.7.5.2	AFW System	NUREG(s)- 1431 1432 Only

SR 3.7.5.2 Bases	AFW System	NUREG(s)- 1431 1432 Only
SR 3.4.12.4 Bases	LTOP System	NUREG(s)- 1431 Only
SR 3.4.12.7 Bases	LTOP System	NUREG(s)- 1431 Only
Ref. 3.4.12 Bases	LTOP System	NUREG(s)- 1431 Only
SR 3.5.2.5 Bases	ECCS - Operating	NUREG(s)- 1431 Only
SR 3.6.3.5 Bases	Containment Isolation Valves	NUREG(s)- 1431 Only
SR 3.6.6A.5	Containment Spray and Cooling Systems (Atmospheric and Dual)	NUREG(s)- 1431 Only
SR 3.6.6A.5 Bases	Containment Spray and Cooling Systems (Atmospheric and Dual)	NUREG(s)- 1431 Only
SR 3.6.6B.5	Containment Spray and Cooling Systems (Atmospheric and Dual)	NUREG(s)- 1431 Only
SR 3.6.6B.5 Bases	Containment Spray and Cooling Systems (Atmospheric and Dual)	NUREG(s)- 1431 Only
SR 3.6.6C.3	Containment Spray System (Ice Condenser)	NUREG(s)- 1431 Only
SR 3.6.6C.3 Bases	Containment Spray System (Ice Condenser)	NUREG(s)- 1431 Only
SR 3.6.6D.3	QS System (Subatmospheric)	NUREG(s)- 1431 Only
SR 3.6.6D.3 Bases	QS System (Subatmospheric)	NUREG(s)- 1431 Only
SR 3.6.6E.6	RS System (Subatmospheric)	NUREG(s)- 1431 Only
SR 3.6.6E.6 Bases	RS System (Subatmospheric)	NUREG(s)- 1431 Only
SR 3.6.9.1 Bases	HMS (Atmospheric, Ice Condenser, and Dual)	NUREG(s)- 1431 Only
SR 3.6.12.1	Vacuum Relief Valves (Atmospheric and Ice Condenser)	NUREG(s)- 1431 Only
SR 3.6.12.1 Bases	Vacuum Relief Valves (Atmospheric and Ice Condenser)	NUREG(s)- 1431 Only
SR 3.7.3.1	MFIVs and MFRVs and [Associated Bypass Valves]	NUREG(s)- 1431 Only
SR 3.7.3.1 Bases	MFIVs and MFRVs and [Associated Bypass Valves]	NUREG(s)- 1431 Only
SR 3.9.4.2 Bases	Containment Penetrations	NUREG(s)- 1431 Only
SR 3.5.2.5	ECCS - Operating	NUREG(s)- 1432 Only
SR 3.5.2.5 Bases	ECCS - Operating	NUREG(s)- 1432 Only
SR 3.6.6A.6	Containment Spray and Cooling Systems (Atmospheric and Dual)	NUREG(s)- 1432 Only

SR 3.6.6A.6 Bases	Containment Spray and Cooling Systems (Atmospheric and Dual)	NUREG(s)- 1432 Only
SR 3.6.6B.6	Containment Spray and Cooling Systems (Atmospheric and Dual)	NUREG(s)- 1432 Only
SR 3.6.6B.6 Bases	Containment Spray and Cooling Systems (Atmospheric and Dual)	NUREG(s)- 1432 Only
SR 3.6.7.4	Spray Additive System (Atmospheric and Dual)	NUREG(s)- 1432 Only
SR 3.6.7.4 Bases	Spray Additive System (Atmospheric and Dual)	NUREG(s)- 1432 Only
SR 3.6.9.1 Bases	HMS (Atmospheric and Dual)	NUREG(s)- 1432 Only
SR 3.6.12.1	Vacuum Relief Valves (Dual)	NUREG(s)- 1432 Only
SR 3.6.12.1 Bases	Vacuum Relief Valves (Dual)	NUREG(s)- 1432 Only
SR 3.7.3.1	MFIVs [and [MFIV] Bypass Valves]	NUREG(s)- 1432 Only
SR 3.7.3.1 Bases	MFIVs [and [MFIV] Bypass Valves]	NUREG(s)- 1432 Only
SR 3.9.3.2 Bases	Containment Penetrations	NUREG(s)- 1432 Only
SR 3.1.7.7	SLC System	NUREG(s)- 1433 1434 Only
SR 3.1.7.7 Bases	SLC System	NUREG(s)- 1433 1434 Only
SR 3.6.4.2.2	SCIVs	NUREG(s)- 1433 1434 Only
SR 3.6.4.2.2 Bases	SCIVs	NUREG(s)- 1433 1434 Only
5.5.7	Ventilation Filter Testing Program (VFTP)	NUREG(s)- 1433 1434 Only
5.5.9	Diesel Fuel Oil Testing Program	NUREG(s)- 1433 1434 Only
5.5.14	Control Room Envelope (CRE) Habitability Program	NUREG(s)- 1433 1434 Only
5.5.16	Surveillance Frequency Control Program	NUREG(s)- 1433 1434 Only
SR 3.4.3.1	S/RVs	NUREG(s)- 1433 Only
SR 3.4.3.1 Bases	S/RVs	NUREG(s)- 1433 Only
SR 3.4.5.1	RCS PIV Leakage	NUREG(s)- 1433 Only
SR 3.4.5.1 Bases	RCS PIV Leakage	NUREG(s)- 1433 Only
SR 3.5.1.2 Bases	ECCS - Operating	NUREG(s)- 1433 Only
SR 3.5.1.6 Bases	ECCS - Operating	NUREG(s)- 1433 Only

SR 3.5.1.7	ECCS - Operating	NUREG(s)- 1433 Only
SR 3.5.1.7 Bases	ECCS - Operating	NUREG(s)- 1433 Only
SR 3.5.3.2 Bases	RCIC System	NUREG(s)- 1433 Only
SR 3.5.3.3 Bases	RCIC System	NUREG(s)- 1433 Only
SR 3.6.1.3.6	PCIVs	NUREG(s)- 1433 Only
SR 3.6.1.3.6 Bases	PCIVs	NUREG(s)- 1433 Only
SR 3.6.1.3.8	PCIVs	NUREG(s)- 1433 Only
SR 3.6.1.3.8 Bases	PCIVs	NUREG(s)- 1433 Only
SR 3.6.1.3.10 Bases	PCIVs	NUREG(s)- 1433 Only
SR 3.6.1.7.2 Bases	Reactor Building-to-Suppression Chamber Vacuum Breakers	NUREG(s)- 1433 Only
SR 3.6.1.8.2 Bases	Suppression Chamber-to-Drywell Vacuum Breakers	NUREG(s)- 1433 Only
SR 3.6.2.3.3	RHR Suppression Pool Cooling	NUREG(s)- 1433 Only
SR 3.6.2.3.3 Bases	RHR Suppression Pool Cooling	NUREG(s)- 1433 Only
SR 3.6.2.4.3	RHR Suppression Pool Spray	NUREG(s)- 1433 Only
SR 3.6.2.4.3 Bases	RHR Suppression Pool Spray	NUREG(s)- 1433 Only
SR 3.6.3.1.1 Bases	[Drywell Cooling System Fans]	NUREG(s)- 1433 Only
SR 3.4.4.1	S/RVs	NUREG(s)- 1434 Only
SR 3.4.4.1 Bases	S/RVs	NUREG(s)- 1434 Only
SR 3.4.6.1	RCS PIV Leakage	NUREG(s)- 1434 Only
SR 3.4.6.1 Bases	RCS PIV Leakage	NUREG(s)- 1434 Only
SR 3.5.1.2 Bases	ECCS - Operating	NUREG(s)- 1434 Only
SR 3.5.1.4	ECCS - Operating	NUREG(s)- 1434 Only
SR 3.5.1.4 Bases	ECCS - Operating	NUREG(s)- 1434 Only
SR 3.5.3.2 Bases	RCIC System	NUREG(s)- 1434 Only
SR 3.5.3.3 Bases	RCIC System	NUREG(s)- 1434 Only
SR 3.6.1.3.5	PCIVs	NUREG(s)- 1434 Only
SR 3.6.1.3.5 Bases	PCIVs	NUREG(s)- 1434 Only

SR 3.6.1.3.7	PCIVs	NUREG(s)- 1434 Only
SR 3.6.1.3.7 Bases	PCIVs	NUREG(s)- 1434 Only
SR 3.6.1.7.3	RHR Containment Spray	NUREG(s)- 1434 Only
SR 3.6.1.7.3 Bases	RHR Containment Spray	NUREG(s)- 1434 Only
SR 3.6.2.3.3	RHR Suppression Pool Cooling	NUREG(s)- 1434 Only
SR 3.6.2.3.3 Bases	RHR Suppression Pool Cooling	NUREG(s)- 1434 Only
SR 3.6.3.2.1 Bases	[Drywell Purge System]	NUREG(s)- 1434 Only
SR 3.6.5.3.4	Drywell Isolation Valves	NUREG(s)- 1434 Only
SR 3.6.5.3.4 Bases	Drywell Isolation Valves	NUREG(s)- 1434 Only

1. SUMMARY DESCRIPTION

The proposed change expands the applicability of the Surveillance Frequency Control Program (SFCP) to include periodic testing frequencies in the Technical Specifications (TS) Section 5.5, "Programs and Manuals." The proposed change also revises Surveillance Requirements (SRs) that reference the Inservice Testing (IST) Program to instead reference the SFCP and revises the SFCP to provide appropriate control of inservice tests frequencies as required by 10 CFR 50.55a. Lastly, the proposed change revises the SFCP to acknowledge that licensees approved to utilize 10 CFR 50.69 may remove structures, systems, and components (SSCs) from the IST Program and apply alternative treatments. The proposed change affects the Standard Technical Specifications (STS) in NUREG-1430, NUREG-1431, NUREG-1432, NUREG-1433, and NUREG-1434[1].

2. DETAILED DESCRIPTION

2.1. Background

Surveillance Frequency Control Program (SFCP)

In July 2009, the NRC approved TSTF-425, Revision 3, "Relocate Surveillance Frequencies to Licensee Control - RITSTF Initiative 5b."[2] TSTF-425 relocated all periodic Surveillance Frequencies to licensee control. All testing frequencies were relocated except:

- Frequencies that reference other approved programs for the specific interval (such as the Inservice Testing Program or the Primary Containment Leakage Rate Testing Program);
- Frequencies that are purely event driven (e.g., "Each time the control rod is withdrawn to the 'full out' position");
- Frequencies that are event-driven but have a time component for performing the surveillance on a onetime basis once the event occurs (e.g., "within 24 hours after thermal power reaching ≥ 95% RTP"); and
- Frequencies that are related to specific conditions (e.g., battery degradation, age, and capacity) or conditions for the performance of a surveillance requirement (e.g., "drywell to suppression chamber differential pressure decrease").

Revisions to the Surveillance Frequencies are made by the licensee following the SFCP, which is a program added to the Administrative Controls chapter of the TS. The SFCP directs licensees to evaluate Surveillance Frequency changes in accordance with NEI 04-10, Revision 1, "Risk-

[1] NUREG-1430 provides the STS for Babcock & Wilcox plant designs.
NUREG-1431 provides the STS for Westinghouse plant designs.
NUREG-1432 provides the STS for Combustion Engineering plant designs.
NUREG-1433 provides the STS for BWR/4 plant designs, but is also representative of the BWR/2, BWR/3, and, in this case, of the BWR/5 plant design.
NUREG-1434 provides the STS for BWR/6 plant designs, but is also representative in some cases of the BWR/5 plant design.

[2] NRC Agencywide Documents Access and Management System (ADAMS) Accession No. ML090850642.

Informed Method for Control of Surveillance Frequencies," which was approved by the NRC on September 19, 2007[3].

TSTF-425 has been incorporated into the TS of all operating plants.

ASME Inservice Testing Program

The STS have always included references to inservice testing required by the American Society of Mechanical Engineers (ASME) Code. STS published by the NRC in the 1970's and 1980's included a Surveillance Requirement 4.0.5 which stated that the inservice testing required by the ASME Code was in addition to the SRs in the TS. The TS SRs did not duplicate the requirements in the ASME Code.

In the improved STS first published in 1993, SR 4.0.5 was eliminated, and specific SRs based on the ASME Code inservice testing were added to the TS. For example, NUREG-1431 SR 3.5.2.3 stated, "Verify each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head." The Frequency was "In accordance with the Inservice Testing Program." The Bases clearly linked the SR to the ASME Code-required testing by stating, "Periodic surveillance testing of ECCS pumps to detect gross degradation caused by impeller structural damage or other hydraulic component problems is required by Section XI of the ASME Code. … SRs are specified in the Inservice Testing Program, which encompasses Section XI of the ASME Code. Section XI of the ASME Code provides the activities and Frequencies necessary to satisfy the requirements." The improved STS also added an Inservice Testing Program to the TS Administrative Controls. The program referenced the ASME Code pump, valve, and snubber testing required by 10 CFR 50.55a and equated the ASME testing interval terminology with TS Frequencies.

The Code of Federal Regulations, paragraph 50.55a(f), "Preservice and inservice testing requirements," requires that systems and components of boiling and pressurized water-cooled nuclear power reactors must meet the requirements for preservice and inservice testing (referred to collectively as inservice testing) of the ASME Boiler and Pressure Vessel Code and ASME Operations and Maintenance Code.

The TS Administrative Controls IST Program proved to be problematic, and the NRC staff issued Regulatory Issue Summary (RIS) 2012-10, "NRC Staff Position on Applying Surveillance Requirement 3.0.2 and 3.0.3 to Administrative Controls Program Tests," to clarify the TS requirements. The TSTF created TSTF-545, "TS Inservice Testing Program Removal & Clarify SR Usage Rule Application to Section 5.5 Testing," which was approved by the NRC in December 2015[4]. TSTF-545 eliminated the TS Administrative Controls IST Program. The traveler also added a new defined term, "Inservice Testing Program," which was defined as, "the licensee program that fulfills the requirements of 10 CFR 50.55a(f)." Following the STS format conventions, the defined term "Inservice Testing Program," was capitalized throughout the STS and STS Bases. Over 75% of the operating plants have incorporated TSTF-545 into their TS.

[3] NRC ADAMS Accession No. ML072570267.
[4] ADAMS Accession No. ML15317A071.

10 CFR 50.69

10 CFR 50.69, "Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors," was promulgated in 2004. Licensees that receive NRC approval to use 10 CFR 50.69 may apply a categorization process to determine the Risk-Informed Safety Class (RISC) for structures, systems, or components (SSCs). For SSCs that are determined to be RISC-3 (safety-related SSCs that perform low safety significant functions), alternative treatment requirements may be used in lieu of other regulatory requirements.

10 CFR 50.69(b), "Applicability and scope of risk-informed treatment of SSCs and submittal/approval process," states, in part:

> A holder of a license to operate a light water reactor (LWR) nuclear power plant under this part … may voluntarily comply with the requirements in this section as an alternative to compliance with the following requirements for RISC–3 and RISC–4 SSCs:
>
> …
>
> (1)(v): The inservice testing requirements in 10 CFR 50.55a(f); the inservice inspection, and repair and replacement (with the exception of fracture toughness), requirements for ASME Class 2 and Class 3 SSCs in 10 CFR 50.55a(g); and the electrical component quality and qualification requirements in Section 4.3 and 4.4 of IEEE 279, and Sections 5.3 and 5.4 of IEEE 603-1991, as incorporated by reference in 10 CFR 50.55a(h).

10 CFR 50.69(d)(2), "Alternative Treatment Requirements," "RISC-3 SSCs," states:

> The licensee or applicant shall ensure, with reasonable confidence, that RISC–3 SSCs remain capable of performing their safety-related functions under design basis conditions, including seismic conditions and environmental conditions and effects throughout their service life. The treatment of RISC–3 SSCs must be consistent with the categorization process. Inspection and testing, and corrective action shall be provided for RISC–3 SSCs.
>
> (i) Inspection and testing. Periodic inspection and testing activities must be conducted to determine that RISC–3 SSCs will remain capable of performing their safety-related functions under design basis conditions; and
>
> (ii) Corrective action. Conditions that would prevent a RISC–3 SSC from performing its safety-related functions under design basis conditions must be corrected in a timely manner. For significant conditions adverse to quality, measures must be taken to provide reasonable confidence that the cause of the condition is determined and corrective action taken to preclude repetition.

Approximately half the operating plant sites have been approved to use 10 CFR 50.69.

2.2. Current Technical Specifications Requirements

NUREG-1430 through NUREG-1434, Section 1.1, "Definitions," defines "Inservice Testing Program" as, "The INSERVICE TESTING PROGRAM is the licensee program that fulfills the requirements of 10 CFR 50.55a(f)."

NUREG-1430, NUREG-1431, and NUREG-1432 TS 5.5.19, and NUREG-1433 and NUREG-1434 TS 5.5.16, titled "Surveillance Frequency Control Program," states:

> This program provides controls for Surveillance Frequencies. The program shall ensure that Surveillance Requirements specified in the Technical Specifications are performed at intervals sufficient to assure the associated Limiting Conditions for Operation are met.
>
> a. The Surveillance Frequency Control Program shall contain a list of Frequencies of those Surveillance Requirements for which the Frequency is controlled by the program.
>
> b. Changes to the Frequencies listed in the Surveillance Frequency Control Program shall be made in accordance with NEI 04-10, "Risk-Informed Method for Control of Surveillance Frequencies," Revision 1.
>
> c. The provisions of Surveillance Requirements 3.0.2 and 3.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program.

The following SRs reference the IST Program in the Frequency or in the Frequency and the Surveillance:

NUREG-1430
SR 3.4.10.1 (Frequency and Surveillance)
SR 3.4.14.1 (Frequency)
SR 3.5.2.4 (Frequency)
SR 3.6.3.5 (Frequency)
SR 3.6.6.5 (Frequency)
SR 3.7.1.1 (Frequency and Surveillance)
SR 3.7.2.1 (Frequency)
SR 3.7.3.1 (Frequency)
SR 3.7.5.2 (Frequency)

NUREG-1431
SR 3.4.10.1 (Frequency and Surveillance)
SR 3.4.14.1 (Frequency)
SR 3.5.2.4 (Frequency)
SR 3.6.3.5 (Frequency)
SR 3.6.6A.5 (Frequency)
SR 3.6.6B.5 (Frequency)
SR 3.6.6C.3 (Frequency)
SR 3.6.6D.3 (Frequency)
SR 3.6.6E.6 (Frequency)
SR 3.6.12.1 (Frequency and Surveillance)
SR 3.7.1.1 (Frequency and Surveillance)
SR 3.7.2.1 (Frequency)
SR 3.7.3.1 (Frequency)
SR 3.7.5.2 (Frequency)

NUREG-1432
SR 3.4.10.1 (Frequency and Surveillance)
SR 3.4.14.1 (Frequency)
SR 3.5.2.4 (Frequency)
SR 3.5.2.5 (Frequency)
SR 3.6.3.5 (Frequency)
SR 3.6.6A.6 (Frequency)
SR 3.6.6B.6 (Frequency)
SR 3.6.7.4 (Frequency)
SR 3.6.12.1 (Frequency and Surveillance)
SR 3.7.1.1 (Frequency and Surveillance)
SR 3.7.2.1 (Frequency)
SR 3.7.3.1 (Frequency)
SR 3.7.5.2 (Frequency)

NUREG-1433
SR 3.1.7.7 (Frequency)
SR 3.4.3.1 (Frequency)
SR 3.4.5.1 (Frequency)
SR 3.5.1.7 (Frequency)
SR 3.6.1.3.6 (Frequency)
SR 3.6.1.3.8 (Frequency)
SR 3.6.2.3.3 (Frequency)
SR 3.6.2.4.3 (Frequency)
SR 3.6.4.2.2 (Frequency)

NUREG-1434
SR 3.1.7.7 (Frequency)
SR 3.4.4.1 (Frequency)
SR 3.4.6.1 (Frequency)
SR 3.5.1.4 (Frequency)
SR 3.6.1.3.5 (Frequency)
SR 3.6.1.3.7 (Frequency)
SR 3.6.1.7.3 (Frequency)
SR 3.6.2.3.3 (Frequency)
SR 3.6.4.2.2 (Frequency)
SR 3.6.5.3.4 (Frequency)

The following TS Section 5.5 programs include periodic testing requirements:

NUREG-1430, NUREG-1431, NUREG-1432

5.5.2, "Primary Coolant Sources Outside Containment"
5.5.10, "Ventilation Filter Testing Program (VFTP)"
5.5.12, "Diesel Fuel Oil Testing Program"
5.5.17, "Control Room Envelope (CRE) Habitability Program"

NUREG-1433, NUREG-1434

5.5.2, "Primary Coolant Sources Outside Containment"
5.5.7, "Ventilation Filter Testing Program (VFTP)"
5.5.9, "Diesel Fuel Oil Testing Program"
5.5.14, "Control Room Envelope (CRE) Habitability Program"

2.3. Reason for the Proposed Change

Section 5.5, "Programs and Manuals," of Chapter 5, "Administrative Controls," of the TS contains periodic testing requirements which meet the criteria for relocation in TSTF-425 but were not relocated to licensee control by the traveler. The NEI 04-10 change evaluation process can be applied to the periodic testing in Section 5.5 and some licensees have received approval to relocate certain Section 5.5 periodic testing frequencies to the SFCP. Therefore, this traveler proposes to move selected Section 5.5 periodic testing frequencies to licensee control under the SFCP.

Moving periodic frequencies that reference the IST Program to the SFCP will permit licensees to change these frequencies using a relief or alternative request to the NRC without requiring a corresponding TS change.

In addition, licensees that have received NRC approval to use 10 CFR 50.69 may categorize SSCs as RISC-3 and apply alternative treatment requirements to systems that are the subject of TS SRs that reference the IST Program. There are several TS SRs which reference the IST Program in the Frequency or in the Surveillance and clarity is needed regarding the application of alternative treatments under 10 CFR 50.69(d)(2) to SSCs subject to those SRs. The proposed

change will revise the TS to reflect that some SSCs previously subject to the IST Program may be subject to the 10 CFR 50.69(d)(2) alternative treatment provisions.

2.4. Description of the Proposed Change

The Section 1.1 defined term, "Inservice Testing Program," is deleted. All uses of the defined term in the TS are removed. SRs that reference the IST Program in the Frequency are revised to reference the SFCP. SRs that reference the IST Program in the Surveillance are revised to eliminate the reference.

The following Section 5.5 programs are revised to reference the SFCP for periodic testing frequencies:

- Primary Coolant Sources Outside Containment
- Ventilation Filter Testing Program (VFTP)
- Diesel Fuel Oil Testing Program
- Control Room Envelope (CRE) Habitability Program

The SFCP, paragraph b, is revised (words in italics are inserted):

b. Changes to the Frequencies listed in the Surveillance Frequency Control Program shall be made*:*

   1. *In accordance with the requirements of 10 CFR 50.55a for Frequencies required by 10 CFR 50.55a(f);*

   2. *In accordance with the requirements of 10 CFR 50.69(d)(2) for the Frequencies of testing permitted under 10 CFR 50.69(b)(1)(v) in lieu of testing required by 10 CFR 50.55a(f);*

   3. *Otherwise,* in accordance with NEI 04-10, "Risk-Informed Method for Control of Surveillance Frequencies," Revision 1.

Plant-specific variations on the proposed changes are discussed below and will be described by licensees following the model application.

The TS Bases are revised to reflect these changes and to describe testing required by the ASME Code.

A model application is attached. The model may be used by licensees desiring to adopt the traveler following NRC approval.

3. TECHNICAL EVALUATION

3.1. Expansion of the SFCP to TS Section 5.5 Periodic Testing

A review of Section 5.5 of the TS identified several periodic testing frequencies that do not meet the TSTF-425 exclusion criteria and should be controlled under the SFCP.

Primary Coolant Sources Outside Containment

This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. The current TS requires integrated leak test requirements for each system once per [18] months. This periodic frequency does not meet any of the TSTF-425 exclusion categories:

- It does not reference other approved programs for the specific interval;
- It is not event driven or event driven with a time component; and
- It is not related to specific conditions.

Therefore the [18] month frequency is replaced with a reference to the SFCP.

The NRC has previously approved placing this frequency in the SFCP for Wolf Creek (ADAMS Accession No. ML21053A117) and Arkansas Nuclear One Unit 1 (ADAMS Accession No. ML19098A955).

Ventilation Filter Testing Program (VFTP)

This program implements testing of Engineered Safety Feature (ESF) filter ventilation systems. The current TS requires performing the testing at the frequencies specified in Regulatory Guide 1.52, Revision 2, or a plant-specific Regulatory Guide reference. Regulatory Guide 1.52 contains both periodic frequencies (18 months or 24 months, depending on the revision, and after 720 hours of operation) and event-driven frequencies (such as following painting, fire, or chemical release in any ventilation zone communicating with the system). The 720 hour of operation periodic requirement is similar to SRs that are performed based on Effective Full Power Days (EFPDs) of operation, which were moved to the SFCP by TSTF-425. The periodic testing frequencies do not meet any of the TSTF-425 exclusion categories:

- It does not reference other approved programs for the specific interval;
- It is not event driven or event driven with a time component; and
- It is not related to specific conditions.

The NEI 04-10 methodology describes the evaluation of changes to frequencies that are referenced Regulatory Guides.

Therefore, the reference to testing frequencies is revised to state that the periodic frequencies are in accordance with the SFCP, and the event-based Frequencies are in accordance with the currently referenced Regulatory Guide.

Diesel Fuel Oil Testing Program

This program implements testing of both new diesel fuel oil and stored diesel fuel oil. The current TS requires the total particulate concentration of the stored fuel oil to be determined every 31 days. This periodic frequency does not meet any of the TSTF-425 exclusion categories:

- It does not reference other approved programs for the specific interval;
- It is not event driven or event driven with a time component; and
- It is not related to specific conditions.

Therefore the 31 day frequency is replaced with a requirement to control the frequency under the SFCP.

The NRC has previously approved placing this frequency in the SFCP for Wolf Creek (ADAMS Accession No. ML21053A117) and Arkansas Nuclear One Unit 1 (ADAMS Accession No. ML19098A955).

Control Room Envelope (CRE) Habitability Program

This program ensures that CRE habitability is maintained such that CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The current TS requires determining the unfiltered air inleakage past the CRE boundary into the CRE at the periodic frequency specified in Regulatory Guide 1.197, Revision 0, which is every 3 years, and following certain event-related conditions, such as when changes are made to structures, systems, and components that could impact CRE integrity, or when a new limiting condition or alignment arises for which no inleakage data is available. The program also requires measurement of the CRE pressure relative to all external areas adjacent to the CRE boundary every [18] months on a Staggered Test Basis and performance of an assessment of the CRE boundary every [18] months.

The periodic testing frequencies do not meet any of the TSTF-425 exclusion categories:

- They do not reference other approved programs for the specific interval;
- They are not event driven or event driven with a time component; and
- They are not related to specific conditions.

Therefore, the reference to testing frequencies is revised to state that the periodic frequencies are in accordance with the SFCP, and the event-based Frequencies are in accordance with the currently referenced Regulatory Guide 1.197.

The following sentence in paragraph d. is revised, "The results shall be trended and used as part of the [18] month assessment of the CRE boundary." The sentence is changed to state the "periodic assessment" instead of the "[18] month assessment." This corrects an error in TSTF-448, Revision 3, "Control Room Habitability," which added the program. Per Regulatory Guide 1.197, Figure 1, the periodic assessment is performed between inleakage tests, or every 6 years. This error was discovered immediately prior to issuance of the Notice of Availability and the NRC acknowledged the error, but the NRC and industry agreed to not revise the traveler and delay its approval.

3.2. Movement of Inservice Testing Program Based Frequencies to the SFCP

SRs that reference the IST Program in the Frequency are revised to reference the SFCP.

The term, "Inservice Testing Program," is defined in the TS as, "the licensee program that fulfills the requirements of 10 CFR 50.55a(f)." TSTF-545, "TS Inservice Testing Program Removal & Clarify SR Usage Rule Application to Section 5.5 Testing,"[5] removed the TS Section 5.5 "Inservice Testing Program," and added the defined term.

The SFCP is revised to state, "Changes to the Frequencies listed in the Surveillance Frequency Control Program shall be made: 1. In accordance with the requirements of 10 CFR 50.55a for Frequencies required by 10 CFR 50.55a(f)."

The proposed change is administrative in that there is no change to the Frequency for performing the SRs. Should a licensee desire to change a test frequency specified in the ASME Code, the appropriate regulatory approval must be obtained in accordance with 10 CFR 50.55a regardless of whether the SR Frequency references the IST Program or the SFCP. There are currently some TS SRs that reference the SFCP in the SR Frequency, but the frequency is based on the IST Program. For example, NUREG-1431, SR 3.4.12.2, tests the RHR System autoclosure interlock at a Frequency in accordance with the SFCP. However, the Bases state that the testing is in accordance with the IST Program. The reviews performed under the SFCP following NEI 04-10 will identify that the Frequency is based on a regulatory requirement. NEI 04-10, Step 7, "Identify Qualitative Considerations to be Addressed," discusses test intervals specified in applicable industry codes and standards and requires any deviations from Frequencies specified in applicable industry codes and standards currently committed to in the plant licensing basis be considered. Before changing the Frequency, the appropriate change process must be followed.

The revised Frequency is documented in the SFCP. The SFCP must contain a list of the frequencies controlled by the program, including tests that implement the requirements of 10 CFR 50.55a(f). Where appropriate, those entries in the list can consist of a reference to the licensee's program that implements 10 CFR 50.55a(f).

The Bases for each of the affected SRs is revised to make clear when testing is required by the 10 CFR 50.55a as an operator aid.

3.3. Removal of References to the Inservice Testing Program from Surveillances

The NUREG-1430, -1431, and -1432 (Pressurized Water Reactor (PWR)) Surveillance Requirements on the Pressurizer Safety Valves, Main Steam Safety Valves, and Vacuum Relief Valves reference the IST Program in the body of the SR. Referencing the IST Program in the body of a Surveillance is used inconsistently in the STS. For example, the ECCS pump testing SR implements testing required by the IST Program, but the IST Program is not referenced in the Surveillance. In NUREG-1433 and NUREG-1434 (the Boiling Water Reactor (BWR)) STS, testing required by the IST Program of safety valves and relief valves does not reference the IST Program in the body of the SR as does the PWR STS.

The requirements of the ASME Code are applicable whether or not the IST Program is referenced in the body of the Surveillance, and a reference to the IST Program in the

[5] Letter from K, Hsueh (NRC) to TSTF, "Final Model Safety Evaluation of Technical Specifications Task Force Traveler TSTF-545, Revision 3, "TS Inservice Testing Program Removal & Clarify SR Usage Rule Application to Section 5.5 Testing," dated December 11, 2015, (ADAMS ML15151A032).

Surveillance does not impose or relieve any requirements, except as discussed regarding 10 CFR 50.69, below.

- The PWR Pressurizer Safety Valve SR states, "Verify each pressurizer safety valve is OPERABLE in accordance with the INSERVICE TESTING PROGRAM." Eliminating the phrase "in accordance with the INSERVICE TESTING PROGRAM," does not change the testing requirement or acceptance criteria in the ASME Code.

- The PWR Vacuum Relief Valves SR states, "Verify each vacuum relief line is OPERABLE in accordance with the INSERVICE TESTING PROGRAM." Eliminating the phrase "in accordance with the INSERVICE TESTING PROGRAM," does not change the testing requirement or acceptance criteria in the ASME Code.

- The PWR Main Steam Safety Valve SR states, "Verify each required MSSV lift setpoint per Table 3.7.1-2 in accordance with the INSERVICE TESTING PROGRAM. Following testing, lift setting shall be within +1%." The acceptance criteria for the SR are located in TS Table 3.7.1-2 and the testing is required by the ASME Code. Eliminating the phrase "in accordance with the INSERVICE TESTING PROGRAM," does not change the testing requirement in the ASME Code or acceptance criteria in the TS.

Therefore, the proposed change does not affect the required testing methods or acceptance criteria and is acceptable.

3.4. Allowance for Alternative Treatment under 10 CFR 50.69

Licensees approved to use 10 CFR 50.69 may categorize some SSCs that were previously subject to the IST Program as RISC-3, which permits the application of alternative testing provisions as described in 10 CFR 50.69(d)(2) in lieu of testing required by 10 CFR 50.55a(f) as described in 10 CFR 50.69(b)(1)(v). 10 CFR 50.69(d)(2)(i) requires periodic inspection and testing activities to verify that RISC–3 SSCs will remain capable of performing their safety-related functions under design basis conditions, but changes to the 10 CFR 50.69(d)(2) alternative testing frequencies are not subject to 10 CFR 50.55a and do not require an evaluation following NEI 04-10.

To acknowledge this allowance, the SFCP, paragraph b, is revised to state: "Changes to the Frequencies listed in the Surveillance Frequency Control Program shall be made: … 2. In accordance with the requirements of 10 CFR 50.69(d)(2) for the Frequencies of testing permitted under 10 CFR 50.69(b)(1)(v) in lieu of testing required by 10 CFR 50.55a(f)."

The NRC has previously approved a similar allowance in licensee TS[6]. Provision 4.0.5 of the Limerick TS was revised to include the following:

> SSCs that have been categorized as Risk-Informed Safety Class (RISC) of RISC-3 in accordance with 10 CFR 50.69, and removed from the INSERVICE TESTING PROGRAM or Inservice Inspection Program in accordance with 10 CFR 50.69(b)(1)(v), are subject to the alternative treatment requirements specified in 10 CFR 50.69(d)(2). The

[6] ADAMS Accession No. ML20160A459.

> SSCs must continue to meet the acceptance criteria specified in the applicable technical specification surveillance requirements; however, the surveillance frequency is determined as part of the alternative treatment.

The NRC's Safety Evaluation concluded:

> The NRC staff finds that the proposed changes to TS 4.0.5 for Limerick, Units 1 and 2, are consistent with the approved implementation of the 10 CFR 50.69 requirements. The proposed changes specify that RISC-3 SSCs must continue to meet the acceptance criteria specified in the applicable TS SR requirements; however, the surveillance frequency will be determined as part of the alternative treatment developed in accordance with 10 CFR 50.69. The proposed changes do not involve a change to any safety limits, limiting safety system settings, limiting control settings, limiting conditions for operation, design features, or administrative controls required by 10 CFR 50.36 and, therefore, the proposed changes do not impact the initiators or assumptions of analyzed events, nor do they impact mitigation of accidents or transient events. Based on these considerations, the NRC staff concludes the proposed changes to TS 4.0.5 are acceptable.

There are differences between the Limerick TS change and the proposed change. The Limerick TS include requirements on the Inservice Inspection Program, but the Inservice Inspection Program does not appear in the STS. It is unnecessary to state that the acceptance criteria are not affected in the proposed change because the STS separates an SR's test and acceptance criteria from the Frequency and the proposed change only affects the SR Frequency column.

Approximately half of the operating plants have approval to use 10 CFR 50.69 and there is an industry initiative for all licensees to adopt 10 CFR 50.69. It is acceptable for licensees that have not been approved to use 10 CFR 50.69 to incorporate paragraph b.2 into TS SFCP. Paragraph b.2 states, "for the Frequencies of testing permitted under 10 CFR 50.69(b)(1)(v)." Licensees that have not been approved to use 10 CFR 50.69 do not have Frequencies permitted under 10 CFR 50.69(b)(1)(v). Therefore, that provision cannot be used until the licensee is approved to use 10 CFR 50.69.

3.5. Structural Changes to the Surveillance Frequency Control Program

Paragraph b of the SFCP states, "Changes to the Frequencies listed in the Surveillance Frequency Control Program shall be made in accordance with NEI 04-10, 'Risk-Informed Method for Control of Surveillance Frequencies,' Revision 1." Most SR Frequency changes will continue to be performed in accordance with NEI 04-10, including the proposed inclusion of Section 5.5 periodic testing requirements.

Paragraph b is revised to provide two alternatives: Changes to IST frequencies following 10 CFR 50.55a and changes to RISC-3 SSC alternative treatment requirements in accordance with 10 CFR 50.69(d)(2). If neither of those alternatives are applicable, the existing requirement to follow the guidance in NEI 04-10 applies.

The other requirements in the SFCP are unaffected by this change.

- Paragraph a states, "The Surveillance Frequency Control Program shall contain a list of Frequencies of those Surveillance Requirements for which the Frequency is controlled by the program." The program will include the Frequencies of the 10 CFR 50.55a(f) testing (which may be a reference to the licensee's program that implements the requirements of 10 CFR 50.55a(f)) and the frequency for the alternative testing required under 10 CFR 50.69(d)(2).

- Paragraph c states, "The provisions of Surveillance Requirements 3.0.2 and 3.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program." The SFCP is invoked from TS Surveillances. SR 3.0.2 and SR 3.0.3 are applicable to TS Surveillances. Therefore, paragraph c is applicable to all SRs, including those that currently invoke the IST Program.

3.6. Plant-Specific Variations

The following plant-specific variations from the STS on which the traveler is based are acceptable and consistent with the justification.

Licensees that Have Not Adopted TSTF-545, "TS Inservice Testing Program Removal & Clarify SR Usage Rule Application to Section 5.5 Testing"

TSTF-545 removed the TS Section 5.5, "Inservice Testing Program," added a new TS Section 1.1 defined term, "INSERVICE TESTING PROGRAM." SRs that referenced the IST Program were revised to use the new defined term. The new term is defined as, "The INSERVICE TESTING PROGRAM is the licensee program that fulfills the requirements of 10 CFR 50.55a(f)."

The proposed change supersedes the changes in TSTF-545. TSTF-545 deleted the Section 5.5 IST Program and revised the SRs to point to the licensee's program that implements 10 CFR 50.55a(f). The proposed traveler revises those same SRs to point to the SFCP, which then references the requirements of 10 CFR 50.55a(f). The practical result of both TSTF-545 and the proposed change is the same: to point to 10 CFR 50.55a(f) for the applicable testing requirements.

Licensees that have not adopted TSTF-545 may adopt the proposed traveler and delete the TS Section 5.5, "Inservice Testing Program" without adding the defined term, "Inservice Testing Program," that is eliminated by this traveler.

Licensees that Have Not Adopted TSTF-289, "Separate Closure Time Testing and Actuation Signal Testing for MSIVs and Feedwater Isolation Valves"

TSTF-289, approved on July 16, 1998, revised NUREG-1430, -1431, and -1432, to separate the closure time testing and the actuation signal testing for Main Steam Isolation Valves (MSIVs) (SR 3.7.2.1) and Feedwater isolation Valves (SR 3.7.3.1) into separate surveillances. The closure time test is required under the IST Program and the actuation signal test is a TS SR. Under the traveler, the two tests are separated with the closure test having a Frequency of "In

Accordance with the Inservice Testing Program," and the actuation test being performed in accordance with the SFCP after approval of TSTF-425.

Not all licensees have adopted TSTF-289 and the presentation of the SR 3.7.2.1 and SR 3.7.3.1 frequencies varies. Some plants TS reference the IST Program while some reference both the IST Program and the SFCP. Regardless of the current presentation, licensees adopting the traveler may revise the Frequency to only reference the SFCP.

Plant-Specific Variation in the Ventilation Filter Testing Program

Some licensee's TS vary from the STS Ventilation Filter Testing Program by not referencing a Regulatory Guide for the testing frequencies and instead listing the periodic and event driven Frequencies in the TS. Licensees adopting the traveler may revise the periodic Frequencies to reference the SFCP and retain the event-driven Frequencies in the TS.

Plant-Specific Variation in the Diesel Fuel Oil Testing Program

Some licensee's TS vary from the STS Diesel Fuel Oil Testing Program by specifying particular testing methods as well as a periodic Frequency for total particular concentration. Licensees adopting the traveler may revise the periodic Frequency to reference the SFCP and retain the other existing requirements.

Plant-Specific SRs that Reference the Inservice Testing Program

Plant TS may include SRs that do not appear in the STS with a SR or Frequency that reference the IST Program. Removal of such IST Program references and movement of Frequencies to the SFCP is justified by the traveler. Licensees will describe the plant specific SRs in their application to adopt the traveler.

Elimination of the Defined Term "Staggered Test Basis"

The STS no longer includes the defined term, "Staggered Test Basis." If that term appears in the plant-specific TS of licensees adopting the traveler and adoption of the traveler eliminates all uses of the defined term, it may be deleted from TS Section 1.1 as part of the adoption of this traveler. This is an administrative change to remove the definition of a term that is no longer used. NEI 04-10 contains guidance for licensees evaluating changes to SR frequencies that are or will be performed on a Staggered Test Basis, and a TS defined term is not necessary to apply that guidance.

Plants with TS Not Based on the STS

Plants with TS not based on the STS do not typically reference the IST Program in Surveillances other than statements similar to, "No additional Surveillance Requirements other than those required by the INSERVICE TESTING PROGRAM." Those statements can be changed to reference 10 CFR 50.55a(f). The changes in the traveler to individual SRs may or may not be applicable to a non-STS plant. Further, the requirements of the STS Section 5.5 testing programs (Ventilation Filter Testing Program, Diesel Fuel Oil Testing Program, and the Primary Coolant Sources Outside Containment), are typically included in individual SRs in non-STS plants.

The changes to the SFCP are applicable to non-STS plant TS with appropriate, plant-specific, changes to TS 4.0.5, which references the IST Program in the non-STS plant TS. TS 4.0.5 has various presentations in non-STS plants, and, as a result, the TS changes will be plant specific.

3.7. STS Bases Changes

The Bases for the SRs were revised to reference the SFCP instead of the IST Program and were also reviewed and revised as needed to state that the Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f) and controlled under the SFCP.

In addition, other TS Bases reference the IST Program. Those references were reviewed and removed if not needed, or revised to refer to 10 CFR 50.55a(f) to be consistent with the changes to the SFCP.

4. REGULATORY EVALUATION

The regulation at Title 10 of the Code of Federal Regulations (10 CFR) Section 50.36(b) requires:

> Each license authorizing operation of a … utilization facility … will include technical specifications. The technical specifications will be derived from the analyses and evaluation included in the safety analysis report, and amendments thereto, submitted pursuant to [10 CFR] 50.34 ["Contents of applications; technical information"]. The Commission may include such additional technical specifications as the Commission finds appropriate.

Per 10 CFR 50.90, whenever a holder of a license desires to amend the license, application for an amendment must be filed with the Commission, fully describing the changes desired, and following as far as applicable, the form prescribed for original applications.

Per 10 CFR 50.92(a), in determining whether an amendment to a license will be issued to the applicant, the Commission will be guided by the considerations which govern the issuance of initial licenses to the extent applicable and appropriate.

Section IV, "The Commission Policy," of the "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors" (58FR39132), dated July 22, 1993, states in part that improved STS have been developed and will be maintained for each NSSS owners group. The Commission Policy encourages licensees to use the improved STS as the basis for plant-specific Technical Specifications." The industry's proposal of travelers and the NRC's approval of travelers is the method used to maintain the improved STS as described in the Commission's Policy. Following NRC approval, licensees adopt travelers into their plant-specific technical specifications following the requirements of 10 CFR 50.90. Therefore, the traveler process facilitates the Commission's policy while satisfying the requirements of the applicable regulations.

The regulation at 10 CFR 50.36(a)(1) also requires the application to include a "summary statement of the bases or reasons for such specifications, other than those covering administrative

controls." The proposed traveler revises the Bases to be consistent with the Technical Specifications, and therefore, is in compliance with 10 CFR 50.36(a)(1).

The regulation at 10 CFR 50.55a, "Codes and standards," Paragraph (f), "Preservice and inservice testing requirements," requires licensees to meet the inservice testing requirements of the ASME Code.

The regulation at 10 CFR 50.69, "Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors," provides alternative requirements for some SSCs in lieu of the requirements of 10 CFR 50.55a(f).

In conclusion, 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. REFERENCES

None.

Model Application

[DATE] 10 CFR 50.90

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

DOCKET NO.PLANT NAME
[50]-[xxx]
SUBJECT: Application to Revise Technical Specifications to Adopt TSTF-596, "Expand the Applicability of the Surveillance Frequency Control Program (SFCP)"

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

[LICENSEE] requests adoption of TSTF-596, "Expand the Applicability of the Surveillance Frequency Control Program (SFCP)," which is an approved change to the Standard Technical Specifications (STS), into the [PLANT NAME, UNIT NOS] TS. TSTF-596 expands the applicability of the SFCP to include periodic testing frequencies in the TS Section 5.5, "Programs and Manuals." The proposed change also revises Surveillance Requirements (SRs) that reference the Inservice Testing (IST) Program to instead reference the SFCP and revises the SFCP to provide appropriate control of inservice tests frequencies as required by 10 CFR 50.55a. Lastly, the proposed change revises the SFCP to acknowledge that licensees approved to utilize 10 CFR 50.69 may remove structures, systems, and components (SSCs) from the IST Program and apply alternative treatments.

The enclosure provides a description and assessment of the proposed changes. Attachment 1 provides the existing TS pages marked to show the proposed changes. Attachment 2 provides revised (clean) TS pages. Attachment 3 provides the existing TS Bases pages marked to show revised text associated with the proposed TS changes and is provided for information only.

[LICENSEE] requests that the amendment be reviewed under the Consolidated Line Item Improvement Process (CLIIP). Approval of the proposed amendment is requested within 6 months of completion of the NRC's acceptance review. Once approved, the amendment shall be implemented within [90] days.

There are no regulatory commitments in this letter.

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]

Enclosure: Description and Assessment

Attachments:
1. Proposed Technical Specification Changes (Mark-Up)
2. Revised Technical Specification Pages
3. Proposed Technical Specification Bases Changes (Mark-Up) – For Information Only

[The attachments are to be provided by the licensee and are not included in the model application.]

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

ENCLOSURE

DESCRIPTION AND ASSESSMENT

1.0 DESCRIPTION

[LICENSEE] requests adoption of TSTF-596, "Expand the Applicability of the Surveillance Frequency Control Program (SFCP)," which is an approved change to the Standard Technical Specifications (STS), into the [PLANT NAME, UNIT NOS] TS. TSTF-596 expands the applicability of the SFCP to include periodic testing frequencies in the TS Section 5.5, "Programs and Manuals." The proposed change also revises Surveillance Requirements (SRs) that reference the Inservice Testing (IST) Program to instead reference the SFCP and revises the SFCP to provide appropriate control of inservice tests frequencies as required by 10 CFR 50.55a. Lastly, the proposed change revises the SFCP to acknowledge that licensees approved to utilize 10 CFR 50.69 may remove structures, systems, and components (SSCs) from the IST Program and apply alternative treatments.

2.0 ASSESSMENT

2.1 Applicability of Safety Evaluation

[LICENSEE] has reviewed the safety evaluation for TSTF-596 provided to the Technical Specifications Task Force in a letter dated [DATE]. This review included the NRC staff's evaluation, as well as the information provided in TSTF-596. [LICENSEE] has concluded that the justifications presented in TSTF-596 and the 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 Variations

[LICENSEE is not proposing any variations from the TS changes described in TSTF-596 or the applicable parts of the NRC staff's safety evaluation.] [LICENSEE is proposing the following variations from the TS changes described in TSTF-596 or the applicable parts of the NRC staff's safety evaluation:]

[The [PLANT] TS utilize different [numbering][and][titles] than the STS on which TSTF-596 was based. Specifically, [describe differences between the plant-specific TS numbering and/or titles and the TSTF-596 numbering and titles.] These differences are administrative and do not affect the applicability of TSTF-596 to the [PLANT] TS.]

[The [PLANT] TS contain requirements that differ from the STS on which TSTF-596 was based but are encompassed in the TSTF-596 justification. [This variation includes wording differences in the Ventilation Filter Testing Program and Diesel Fuel Oil Testing Program. Describe differences and why TSTF-596 is still applicable.]

[The [PLANT] TS do not include the changes in TSTF-545, "TS Inservice Testing Program Removal & Clarify SR Usage Rule Application to Section 5.5 Testing." As a result, the [PLANT] TS include a TS Section [5.5] "Inservice Testing Program," and do not include a

defined term, "Inservice Testing Program." As discussed in TSTF-596, the proposed change removes the TS Section 5.5 "Inservice Testing Program," in addition to making the other changes described in the traveler.]

[The [PLANT] TS do not include the changes in TSTF-289, "Separate Closure Time Testing and Actuation Signal Testing for MSIVs and Feedwater Isolation Valves." As a result, the [PLANT] TS for the referenced valves contain a single SR that tests both the IST Program closure time and the TS-required verification of the actuation signal. As discussed in TSTF-596, the affected SRs are revised to reference the SFCP in the Frequency.]

[The [PLANT] TS contain a definition of "Staggered Test Basis." With the proposed change, all uses of the defined term are eliminated. Therefore, the defined term is removed from Chapter 1 of the TS.]

[The [PLANT] TS contain SRs that reference the IST Program in the Surveillance or the Frequency that do not appear in the STS on which TSTF-596 was based. These SRs, described below, are included in the proposed change. …]

[The [PLANT] TS are not based on the standard TS on which TSTF-596 is based. (Describe the differences. For example, changes to SR 4.0.5, SRs that reference the IST or 4.0.5, and SRs that contain requirements that are in STS programs.)]

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration Analysis

[LICENSEE] requests adoption of TSTF-596, "Expand the Applicability of the Surveillance Frequency Control Program (SFCP)," which is an approved change to the Standard Technical Specifications (STS), into the [PLANT NAME, UNIT NOS] Technical Specifications (TS). TSTF-596 expands the applicability of the SFCP to include periodic testing frequencies in the TS Section 5.5, "Programs and Manuals." The proposed change also revises Surveillance Requirements (SRs) that reference the Inservice Testing (IST) Program to instead reference the SFCP and revises the SFCP to provide appropriate control of IST frequencies as required by 10 CFR 50.55a. Lastly, the proposed change revises the SFCP to acknowledge that licensees approved to utilize 10 CFR 50.69 may remove structures, systems, and components (SSCs) from the IST Program and apply alternative treatments.

[LICENSEE] has evaluated if a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

   Response: No

   The proposed change relocates periodic Frequencies for SRs to licensee control under the SFCP. Surveillance Frequencies are not an initiator to any accident previously evaluated.

As a result, the probability of any accident previously evaluated is not significantly increased. The systems and components required by the Technical Specifications for which the Surveillance Frequencies are relocated are still required to be operable, meet the acceptance criteria for the SRs, and be capable of performing any mitigative function assumed in the accident analysis. As a result, the consequences of any accident previously evaluated are not significantly increased.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

   Response: No

   No new or different accidents result from utilizing the proposed change. The changes do not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. In addition, the changes do not impose any new or different requirements. The changes do not alter assumptions made in the safety analysis. The proposed changes are consistent with the safety analysis assumptions and current plant operating practice.

   Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   Response: No

   The proposed change is administrative in nature, does not negate any existing requirement, and does not adversely affect existing plant safety margins or the reliability of the equipment assumed to operate in the safety analysis. As such, there are no changes being made to safety analysis assumptions, safety limits or limiting safety system settings that would adversely affect plant safety as a result of the proposed change. Margins of safety are unaffected by relocation of the surveillance test intervals to a licensee-controlled program.

   Therefore, the proposed 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.

3.2 Conclusion

In conclusion, 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 issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

4.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment 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 amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment 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 amendment.

Technical Specifications Changes

1.1 Definitions

EMERGENCY FEEDWATER INITIATION AND CONTROL (EFIC) RESPONSE TIME	The EFIC RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its EFIC actuation setpoint at the channel sensor until the emergency feedwater equipment is capable of performing its function (i.e., valves travel to their required positions, pumps discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays, where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.
ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME	The ESF RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays, where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.
~~INSERVICE TESTING PROGRAM~~	~~The INSERVICE TESTING PROGRAM is the licensee program that fulfills the requirements of 10 CFR 50.55a(f).~~
LEAKAGE	LEAKAGE shall be: a. <u>Identified LEAKAGE</u> 1. LEAKAGE, such as that from pump seals or valve packing (except RCP seal water injection or leakoff), that is captured and conducted to collection systems or a sump or collecting tank; 2. LEAKAGE into the containment atmosphere from sources that are both specifically located and known to not interfere with the operation of leakage detection systems; or 3. Reactor Coolant System (RCS) LEAKAGE through a steam generator to the Secondary System (primary to secondary LEAKAGE);

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.10.1	Verify each pressurizer safety valve is OPERABLE ~~in accordance with the INSERVICE TESTING PROGRAM~~. Following testing, lift settings shall be within ± 1%.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.14.1	----------NOTES---------- 1. Not required to be performed in MODES 3 and 4. 2. Not required to be performed on the RCS PIVs located in the DHR flow path when in the DHR mode of operation. 3. RCS PIVs actuated during the performance of this Surveillance are not required to be tested more than once if a repetitive testing loop cannot be avoided. ----------	
	Verify leakage from each RCS PIV is equivalent to ≤ 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm at an RCS pressure ≥ [2215] psia and ≤ [2255] psia.	~~[In accordance with the INSERVICE TESTING PROGRAM~~ ~~OR~~ [[18] months~~]~~ OR In accordance with the Surveillance Frequency Control Program] AND

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.3	Verify ECCS locations susceptible to gas accumulation are sufficiently filled with water.	[31 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.5.2.4	Verify each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~
SR 3.5.2.5	Verify each ECCS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[[18] months OR In accordance with the Surveillance Frequency Control Program]
SR 3.5.2.6	Verify each ECCS pump starts automatically on an actual or simulated actuation signal.	[[18] months OR In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.5	Verify the isolation time of each automatic power operated containment isolation valve is within limits.	~~[In accordance with the INSERVICE TESTING PROGRAM~~ ~~OR~~ [92 days~~]~~ OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.3.6	Perform leakage rate testing for containment purge valves with resilient seals.	[184 days OR In accordance with the Surveillance Frequency Control Program] AND Within 92 days after opening the valve

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6.4	Verify containment spray locations susceptible to gas accumulation are sufficiently filled with water.	[31 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.6.5	Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~
SR 3.6.6.6	Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[[18] months OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.6.7	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	[[18] months OR In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.1.1	----------NOTE---------- Only required to be performed in MODES 1 and 2. ---------- Verify each required MSSV lift setpoint per Table 3.7.1-1 ~~in accordance with the INSERVICE TESTING PROGRAM~~. Following testing, lift settings shall be within ± 1%.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	----------NOTE---------- Only required to be performed in MODES 1 and 2. ---------- Verify isolation time of each MSIV is within limits.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~
SR 3.7.2.2	----------NOTE---------- Only required to be performed in MODES 1 and 2. ---------- Verify each MSIV actuates to the isolation position on an actual or simulated actuation signal.	[[18] months <u>OR</u> In accordance with the Surveillance Frequency Control Program]

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two valves in the same flow path inoperable for one or more flow paths.	D.1 Isolate affected flow path.	8 hours
E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3. [AND E.2 Be in MODE 4.	6 hours 12 hours]

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	----------NOTE---------- Only required to be performed in MODES 1 and 2. ---------- Verify the isolation time of each [MFSV], [MFCV], and [SFCV] is within limits.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~
SR 3.7.3.2	----------NOTE---------- Only required to be performed in MODES 1 and 2. ---------- Verify each [MFSV], [MFCV], and [SFCV] actuates to the isolation position on an actual or simulated actuation signal.	[[18] months OR In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.5.2	----------NOTE---------- Not required to be performed for the turbine driven EFW pumps, until [24] hours after reaching [800] psig in the steam generators. ---------- Verify the developed head of each EFW pump at the flow test point is greater than or equal to the required developed head.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~
SR 3.7.5.3	----------NOTES---------- 1. Not required to be performed until [24] hours after reaching [800] psig in the steam generators. 2. Not required to be met in MODE 4. ---------- Verify each EFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[[18] months <u>OR</u> In accordance with the Surveillance Frequency Control Program]

5.5 Programs and Manuals

5.5.2 Primary Coolant Sources Outside Containment

This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. The systems include [Low Pressure Injection, Reactor Building Spray, Makeup and Purification, and Hydrogen Recombiner]. The program shall include the following:

a. Preventive maintenance and periodic visual inspection requirements and

b. Integrated leak test requirements for each system at **a Frequency in accordance with the Surveillance Frequency Control Program** ~~least once per [18] months~~.

The provisions of SR 3.0.2 are applicable.

[5.5.3 Post Accident Sampling

----------REVIEWER'S NOTE----------
This program may be eliminated based on the implementation of BAW-2387, "Justification for the Elimination of the Post Accident Sampling System From the Licensing Bases of Babcock and Wilcox-Designed Plants," the associated NRC Safety Evaluation, and implementation of the following commitments:

1. [Licensee] [verified it has or is making a regulatory commitment to develop] contingency plans for obtaining and analyzing highly radioactive samples from the RCS, containment sump, and containment atmosphere. The contingency plans will be contained in [specified document or program] and implementation [is complete, will be completed with the implementation of the License amendment, or will be completed within x days (< 6 months) after the implementation of the License amendment]. Establishment and maintenance of contingency plans is considered a regulatory commitment.

2. The capability for classifying fuel damage events at the Alert level threshold [has been or will be] established for [PLANT] at radioactivity levels of [300 µCi/cc dose equivalent iodine]. This capability will be described in [specified document or program] and implementation [is complete, will be completed with the implementation of the License amendment, or will be completed within x days (< 6 months) after the implementation of the License amendment]. The capability for classifying fuel damage events is considered a regulatory commitment.

3. [Licensee] [verified that it has or is making a regulatory commitment to develop] an ability to assess radioactive iodines released to offsite environs. The capability for monitoring iodines will be maintained within the [specified document or program]. Implementation of this commitment [is complete, will be completed with the implementation of the License amendment, or will be completed within x days (< 6 months) after the

5.5 Programs and Manuals

5.5.6 Pre-Stressed Concrete Containment Tendon Surveillance Program (continued)

accordance with Section XI, Subsection IWL of the ASME Boiler and Pressure Vessel Code and applicable addenda as required by 10 CFR50.55a, except where an alternative, exemption, or relief has been authorized by the NRC.

The provisions of SR 3.0.3 are applicable to the Tendon Surveillance Program inspection frequencies.]

5.5.7 Reactor Coolant Pump Flywheel Inspection Program

This program shall provide for the inspection of each reactor coolant pump flywheel per the recommendation of Regulatory position c.4.b of Regulatory Guide 1.14, Revision 1, August 1975.

5.5.8 Steam Generator (SG) Program

An SG Program shall be established and implemented to ensure that SG tube integrity is maintained. In addition, the SG Program shall include the following:

a. Provisions for condition monitoring assessments. Condition monitoring assessment means an evaluation of the "as found" condition of the tubing with respect to the performance criteria for structural integrity and accident induced leakage. The "as found" condition refers to the condition of the tubing during an SG inspection outage, as determined from the inservice inspection results or by other means, prior to the plugging [or repair] of tubes. Condition monitoring assessments shall be conducted during each outage during which the SG tubes are inspected, plugged, [or repaired] to confirm that the performance criteria are being met.

b. Performance criteria for SG tube integrity. SG tube integrity shall be maintained by meeting the performance criteria for tube structural integrity, accident induced leakage, and operational LEAKAGE.

1. Structural integrity performance criterion: All in-service SG tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, and cool down), all anticipated transients included in the design specification and design basis accidents. This includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary-to-secondary pressure differential and a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the

5.5 Programs and Manuals

5.5.12 Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:

a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:

   1. An API gravity or an absolute specific gravity within limits,

   2. A flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and

   3. A clear and bright appearance with proper color or a water and sediment content within limits,

b. Within 31 days following addition of the new fuel oil to storage tanks, verify that the properties of the new fuel oil, other than those addressed in a., above, are within limits for ASTM 2D fuel oil, and

c. Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested **at a Frequency in accordance with the Surveillance Frequency Control Program.**~~every 31 days.~~

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program testing frequencies.

5.5.13 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.

b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:

   1. A change in the TS incorporated in the license or

   2. A change to the updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.

5.5 Programs and Manuals

5.5.16 Battery Monitoring and Maintenance Program (continued)

5. In lieu of RG 1.129, Regulatory Position 7, Subsection 7.6, "Restoration", the following may be used: "Following the test, record the float voltage of each cell of the string."

b. The program shall include the following provisions:

1. Actions to restore battery cells with float voltage < [2.13] V;

2. Actions to determine whether the float voltage of the remaining battery cells is ≥ [2.13] V when the float voltage of a battery cell has been found to be < [2.13] V;

3. Actions to equalize and test battery cells that had been discovered with electrolyte level below the top of the plates;

4. Limits on average electrolyte temperature, battery connection resistance, and battery terminal voltage; and

5. A requirement to obtain specific gravity readings of all cells at each discharge test, consistent with manufacturer recommendations.

5.5.17 Control Room Envelope (CRE) Habitability Program

A Control Room Envelope (CRE) Habitability Program shall be established and implemented to ensure that CRE habitability is maintained such that, with an OPERABLE Control Room Emergency Air Cleanup System (CREACS), CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of [5 rem whole body or its equivalent to any part of the body] [5 rem total effective dose equivalent (TEDE)] for the duration of the accident. The program shall include the following elements:

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

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

c. Requirements for (i) determining the unfiltered air inleakage past the CRE boundary into the CRE **at the periodic Frequencies in accordance with the Surveillance Frequency Control Program and** in accordance with the testing methods and at the **event-driven f**~~F~~requencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power

5.5 Programs and Manuals

5.5.17 Control Room Envelope (CRE) Habitability Program (continued)

Reactors," Revision 0, May 2003, and (ii) assessing CRE habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.

[The following are exceptions to Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0:

1. ;and]

d. Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one train of the CREACS, operating at the flow rate required by the VFTP, at **a Frequency in accordance with the Surveillance Frequency Control Program**~~a Frequency of [18] months on a STAGGERED TEST BASIS~~. The results shall be trended and used as part of the **periodic** ~~[18] month~~ assessment of the CRE boundary.

e. The quantitative limits on unfiltered air inleakage into the CRE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air inleakage measured by the testing described in paragraph c. The unfiltered air inleakage limit for radiological challenges is the inleakage flow rate assumed in the licensing basis analyses of DBA consequences. Unfiltered air inleakage limits for hazardous chemicals must ensure that exposure of CRE occupants to these hazards will be within the assumptions in the licensing basis.

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

[5.5.18 Setpoint Control Program

----------REVIEWER'S NOTE----------
Adoption of a Setpoint Control Program requires changes to other technical specifications. See TSTF-493, Revision 4, "Clarify Application of Setpoint Methodology for LSSS Functions," Option B, for guidance (Agencywide Documents Access and Management System (ADAMS) Accession Number ML101160026).

This program shall establish the requirements for ensuring that setpoints for automatic protective devices are initially within and remain within the assumptions of the applicable safety analyses, provides a means for processing changes to instrumentation setpoints, and identifies setpoint methodologies to ensure instrumentation will function as required. The program shall ensure that

5.5 Programs and Manuals

5.5.18 Setpoint Control Program (continued)

3. If the as-found value of the instrument channel trip setting is less conservative than the specified AV, then the SR is not met and the instrument channel shall be immediately declared inoperable.

4. The instrument channel setpoint shall be reset to a value that is within the as-left tolerance around the [LTSP or NTSP] at the completion of the surveillance test; otherwise, the channel is inoperable (setpoints may be more conservative than the [LTSP or NTSP] provided that the as-found and as-left tolerances apply to the actual setpoint used to confirm channel performance).

e. The program shall be specified in [insert the facility FSAR reference or the name of any document incorporated into the facility FSAR by reference].]

[5.5.19 Surveillance Frequency Control Program

This program provides controls for Surveillance Frequencies. The program shall ensure that Surveillance Requirements specified in the Technical Specifications are performed at intervals sufficient to assure the associated Limiting Conditions for Operation are met.

a. The Surveillance Frequency Control Program shall contain a list of Frequencies of those Surveillance Requirements for which the Frequency is controlled by the program.

b. Changes to the Frequencies listed in the Surveillance Frequency Control Program shall be made**:**

1. In accordance with the requirements of 10 CFR 50.55a for Frequencies required by 10 CFR 50.55a(f);

2. In accordance with the requirements of 10 CFR 50.69(d)(2) for the Frequencies of testing permitted under 10 CFR 50.69(b)(1)(v) in lieu of testing required by 10 CFR 50.55a(f);

3. Otherwise, in accordance with NEI 04-10, "Risk-Informed Method for Control of Surveillance Frequencies," Revision 1.

c. The provisions of Surveillance Requirements 3.0.2 and 3.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program.]

[5.5.20 Risk Informed Completion Time Program

This program provides controls to calculate a Risk Informed Completion Time (RICT) and must be implemented in accordance with NEI 06-09-A, Revision 0,

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LCO (continued)

condition. Only one valve at a time will be removed from service for testing. The [36] hour exception is based on an 18 hour outage time for each of the two valves. The 18 hour period is derived from operating experience that hot testing can be performed in this timeframe.

ACTIONS

A.1

With one pressurizer safety valve inoperable, restoration must take place within 15 minutes. The Completion Time of 15 minutes reflects the importance of maintaining the RCS overpressure protection system. An inoperable safety valve coincident with an RCS overpressure event could challenge the integrity of the RCPB.

B.1 and B.2

If the Required Action cannot be met within the required Completion Time or if both pressurizer safety valves are inoperable, the plant must be brought to a MODE in which the requirement does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 with any RCS cold leg temperature ≤ [283]°F within 12 hours. The 6 hours allowed is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems. Similarly, the [24] hours allowed is reasonable, based on operating experience, to reach MODE 4 without challenging plant systems. With any RCS cold leg temperature at or below [283]°F, overpressure protection is provided by LTOP. The change from MODE 1, 2, or 3 to MODE 4 reduces the RCS energy (core power and pressure), lowers the potential for large pressurizer insurges, and thereby removes the need for overpressure protection by two pressurizer safety valves.

SURVEILLANCE REQUIREMENTS

SR 3.4.10.1

~~SRs are specified in the INSERVICE TESTING PROGRAM.~~ Pressurizer safety valves are ~~to be~~ tested in accordance with the requirements of the ASME Code (Ref. 1), which provides the activities ~~and the Frequency~~ necessary to satisfy the SR~~s~~. **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**~~No additional requirements are specified.~~

The pressurizer safety valve setpoint is ± [3]% for OPERABILITY; however, the valves are reset to ± 1% during the Surveillance to allow for drift.

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ACTIONS (continued)

The 72 hour time after exceeding the limit allows for the restoration of the leaking PIV to OPERABLE status. This timeframe considers the time required to complete this Action and the low probability of a second valve failing during this period.]

----------REVIEWER'S NOTE----------
Two options are provided for Required Action A.2. The second option (72 hour restoration) is appropriate if isolation of a second valve would place the unit in an unanalyzed condition.

B.1 and B.2

If leakage cannot be reduced, [the system isolated,] or other Required Actions accomplished, the plant must be brought to a MODE in which the requirement does not apply. To achieve this status, the plant must be brought to MODE 3 within 6 hours and to MODE 5 within 36 hours. This Required Action may reduce the leakage and also reduces the potential for a LOCA outside the containment. 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.

C.1

The inoperability of the DHR autoclosure interlock renders the DHR suction isolation valves incapable of isolating in response to a high pressure condition and preventing inadvertent opening of the valves at RCS pressures in excess of the DHR systems design pressure. If the DHR autoclosure interlock is inoperable, operation may continue as long as the DHR suction penetration is closed by at least one closed manual or deactivated automatic valve within 4 hours. This action accomplishes the purpose of the autoclosure function.

SURVEILLANCE REQUIREMENTS

SR 3.4.14.1

Performance of leakage testing on each RCS PIV or isolation valve used to satisfy Required Action A.1 or A.2 is required to verify that leakage is below the specified limit and to identify each leaking valve. The leakage limit of 0.5 gpm per inch of nominal valve diameter up to 5 gpm maximum applies to each valve. Leakage testing requires a stable pressure condition.

BASES

SURVEILLANCE REQUIREMENTS (continued)

For the two PIVs in series, the leakage requirement applies to each valve individually and not to the combined leakage across both valves. If the PIVs are not individually leakage tested, one valve may have failed completely and not detected if the other valve in series meets the leakage requirement. In this situation, the protection provided by redundant valves would be lost.

Testing is to be performed every 9 months, but may be extended, if the plant does not go into MODE 5 for at least 7 days.

~~----------REVIEWER'S NOTE----------~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of [18] months or the reference to the Surveillance Frequency Control Program should be used.~~
~~----------~~

[The [18 month] Frequency is consistent with 10 CFR 50.55a(g) (Ref. 8) as ~~contained in the INSERVICE TESTING PROGRAM, is within frequency~~ allowed by the American Society of Mechanical Engineers (ASME) Code (Ref. 7), and is based on the need to perform such surveillances under conditions that apply during an outage and the potential for an unplanned transient if the Surveillance were performed with the plant at power.

OR

The Surveillance Frequency **[is based on the requirements of 10 CFR 50.55a(f), and]** is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

[In addition, testing must be performed once after the valve has been opened by flow or exercised to ensure tight reseating. PIVs disturbed in the performance of this Surveillance should also be tested unless documentation shows that an infinite testing loop cannot practically be avoided. Testing must be performed within 24 hours after the valve has been reseated. Within 24 hours is a reasonable and practical time limit for performing this test after opening or reseating a valve.]

BASES

SURVEILLANCE REQUIREMENTS (continued)

subsequent evaluation that the ECCS is not rendered inoperable by the accumulated gas (i.e., the system is sufficiently filled with water), the Surveillance may be declared met. Accumulated gas should be eliminated or brought within the acceptance criteria limits.

ECCS locations susceptible to gas accumulation are monitored and, if gas is found, the gas volume is compared to the acceptance criteria for the location. Susceptible locations in the same system flow path which are subject to the same gas intrusion mechanisms may be verified by monitoring a representative sub-set of susceptible locations. Monitoring may not be practical for locations that are inaccessible due to radiological or environmental conditions, the plant configuration, or personnel safety. For these locations alternative methods (e.g., operating parameters, remote monitoring) may be used to monitor the susceptible location. Monitoring is not required for susceptible locations where the maximum potential accumulated gas void volume has been evaluated and determined to not challenge system OPERABILITY. The accuracy of the method used for monitoring the susceptible locations and trending of the results should be sufficient to assure system OPERABILITY during the Surveillance interval.

[The 31 day Frequency takes into consideration the gradual nature of gas accumulation in the ECCS piping and the existence of procedural controls governing system operation.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. The Surveillance Frequency may vary by location susceptible to gas accumulation.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.5.2.4

Periodic surveillance testing of ECCS pumps to detect gross degradation caused by impeller structural damage or other hydraulic component problems is required by the ASME Code (Ref. 6). This type of testing may be accomplished by measuring the pump's developed head at only

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SURVEILLANCE REQUIREMENTS (continued)

one point of the pump's characteristic curve. This verifies both that the measured performance is within an acceptable tolerance of the original pump baseline performance and that the performance at the test flow is greater than or equal to the performance assumed in the plant accident analysis. **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.** ~~SRs are specified in the INSERVICE TESTING PROGRAM of the ASME Code.~~ The ASME Code provides the activities ~~and Frequencies~~ necessary to satisfy the requirements.

SR 3.5.2.5 and SR 3.5.2.6

These SRs demonstrate that each automatic ECCS valve actuates to the required position on an actual or simulated ESFAS signal and that each ECCS pump starts on receipt of an actual or simulated ESFAS signal. This SR is not required for valves that are locked, sealed, or otherwise secured in position under administrative controls. [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. The 18 month Frequency is also acceptable based on consideration of the design reliability (and confirming operating experience) of the equipment.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

The actuation logic is tested as part of the ESFAS testing~~, and equipment performance is monitored as part of the INSERVICE TESTING PROGRAM~~.

SR 3.5.2.7

This Surveillance ensures that these valves are in the proper position to prevent the HPI pump from exceeding its runout limit. [This 18 month

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SURVEILLANCE REQUIREMENTS (continued)

during MODES 1, 2, 3, and 4 for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in the proper position, is low.

SR 3.6.3.4

This SR requires verification that each containment isolation manual valve and blind flange that is located inside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the containment boundary is within design limits. For containment isolation valves inside containment, the Frequency of "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is appropriate, since these containment isolation valves are operated under administrative controls and the probability of their misalignment is low. The SR specifies that containment isolation valves open under administrative controls are not required to meet the SR during the time they are open. This SR does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing, or securing.

The Note allows valves and blind flanges located in high radiation areas to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the access to these areas is typically restricted during MODES 1, 2, 3, and 4 for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in their proper position, is small.

SR 3.6.3.5

Verifying that the isolation time of each automatic power operated containment isolation valve is within limits is required to demonstrate OPERABILITY. The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analyses.

~~REVIEWER'S NOTE~~

~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of [92] days or the reference to the Surveillance Frequency Control Program should be used.~~

BASES

SURVEILLANCE REQUIREMENTS (continued)

[The Frequency of this SR is ~~in accordance with [the INSERVICE TESTING PROGRAM] [~~92 days.

OR

The Surveillance Frequency **[is based on the requirements of 10 CFR 50.55a(f), and]** is controlled under the Surveillance Frequency Control Program.]]

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.3.6

For containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J, Option [A][B] is required to ensure OPERABILITY. Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than do other seal types. [Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), a Frequency of once per 184 days was established as part of the NRC resolution of Generic Issue B-20, "Containment Leakage Due to Seal Deterioration" (Ref. 9).

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

Additionally, this SR must be performed within 92 days after opening the valve. The 92 day Frequency was chosen recognizing that cycling the valve could introduce additional seal degradation (greater than that

BASES

SURVEILLANCE REQUIREMENTS (continued)

Containment Spray System locations susceptible to gas accumulation are monitored and, if gas is found, the gas volume is compared to the acceptance criteria for the location. Susceptible locations in the same system flow path which are subject to the same gas intrusion mechanisms may be verified by monitoring a representative sub-set of susceptible locations. Monitoring may not be practical for locations that are inaccessible due to radiological or environmental conditions, the plant configuration, or personnel safety. For these locations alternative methods (e.g., operating parameters, remote monitoring) may be used to monitor the susceptible location. Monitoring is not required for susceptible locations where the maximum potential accumulated gas void volume has been evaluated and determined to not challenge system OPERABILITY. The accuracy of the method used for monitoring the susceptible locations and trending of the results should be sufficient to assure system OPERABILITY during the Surveillance interval.

[The 31 day Frequency takes into consideration the gradual nature of gas accumulation in the Containment Spray System piping and the procedural controls governing system operation.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. The Surveillance Frequency may vary by location susceptible to gas accumulation.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.6.5

Verifying that each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head ensures that spray pump performance has not degraded during the cycle. Flow and differential pressure are normal tests of centrifugal pump performance required by the ASME Code (Ref. 7). Since the Containment Spray System pumps cannot be tested with flow through the spray headers, they are tested on recirculation flow. This test confirms one point on the pump design curve and is indicative of overall

BASES

SURVEILLANCE REQUIREMENTS (continued)

performance. Such ~~inservice~~ tests confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. ~~The Frequency of this SR is in accordance with the INSERVICE TESTING PROGRAM.~~ **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**

SR 3.6.6.6 and SR 3.6.6.7

These SRs require verification that each automatic containment spray valve actuates to its correct position and that each containment spray pump starts upon receipt of an actual or simulated actuation signal. This SR is not required for valves that are locked, sealed, or otherwise secured in position under administrative controls. [The [18] month Frequency is based on the need to perform these Surveillances under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillances were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillances when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.6.8

This SR requires verification that each [required] containment cooling train actuates upon receipt of an actual or simulated actuation signal. [The [18] month Frequency is based on engineering judgment and has been shown to be acceptable through operating experience. See SR 3.6.6.6 and SR 3.6.6.7, above, for further discussion of the basis for the [18] month Frequency.

OR

BASES

LCO

The MSSVs setpoints are established to prevent overpressurization as discussed in the Applicable Safety Analysis section of these Bases. The LCO requires all MSSVs to be OPERABLE to ensure compliance with the ASME Code following DBAs initiated at full power. Operation with less than a full complement of MSSVs requires limitations on unit THERMAL POWER and adjustment of the Reactor Protection System (RPS) trip setpoints. This effectively limits the Main Steam System steam flow while the MSSV relieving capacity is reduced due to valve inoperability. To be OPERABLE, lift setpoints must remain within limits, according to Table 3.7.1-1 in the accompanying LCO.

The OPERABILITY of the MSSVs is defined as the ability to open within the setpoint tolerances, relieve steam generator overpressure, and reseat when pressure has been reduced.

The OPERABILITY of the MSSVs is determined by periodic surveillance testing in accordance with the **ASME Code** ~~INSERVICE TESTING PROGRAM~~.

The lift settings, according to Table 3.7.1-1 in the accompanying LCO, correspond to ambient conditions of the valve at nominal operating temperature and pressure.

This LCO provides assurance that the MSSVs will perform the design safety function to mitigate the consequences of accidents that could result in a challenge to the RCPB.

APPLICABILITY

In MODE 1 above [18]% RTP, the number of MSSVs per steam generator required to be OPERABLE must be within the acceptable region, according to Figure 3.7.1-1 in the accompanying LCO. Below [18]% RTP in MODES 1, 2, and 3, only two MSSVs are required OPERABLE per steam generator.

In MODES 4 and 5, there is no credible transient requiring the MSSVs.

The steam generators are not normally used for heat removal in MODES 5 and 6, and thus cannot be overpressurized; there is no requirement for the MSSVs to be OPERABLE in these MODES.

ACTIONS

The ACTIONS Table is modified by a Note indicating that separate Condition entry is allowed for each MSSV.

BASES

ACTIONS (continued)

reduce the setpoints. The Completion Time of 36 hours for Required Action A.2 is based on a reasonable time to correct the MSSV inoperability, the time required to perform the power reduction, operating experience in resetting all channels of a protective function, and on the low probability of the occurrence of a transient that could result in steam generator overpressure during this period.

B.1 and B.2

With one or more MSSVs inoperable, a verification by administrative means that at least [two] required MSSVs per steam generator are OPERABLE, with each valve from a different lift setting range, is performed.

If the MSSVs cannot be restored to OPERABLE status in 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 4 within 12 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 3.7.1.1

This SR verifies the OPERABILITY of the MSSVs by the verification of each MSSV lift setpoint in accordance with the ~~INSERVICE TESTING PROGRAM. The~~ ASME Code (Ref. 4)**, which** requires that safety and relief valve tests be performed in accordance with ANSI/ASME OM-1-1987 (Ref. 5). According to Reference 5, the following tests are required for MSSVs:

a. Visual examination,

b. Seat tightness determination,

c. Setpoint pressure determination (lift setting),

d. Compliance with owner's seat tightness criteria, and

e. Verification of the balancing device integrity device on balanced valves.

BASES

SURVEILLANCE REQUIREMENTS (continued)

The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program. ~~The ANSI/ASME Standard requires the testing of all valves every 5 years, with a minimum of 20% of the valves tested every 24 months.~~ Reference 4 provides the activities ~~and frequencies~~ necessary to satisfy the requirements. Table 3.7.1-1 allows a ± [3]% setpoint tolerance for OPERABILITY; however, the valves are reset to ± 1% during the Surveillance to allow for drift.

This SR is modified by a Note that allows entry into and operation in MODE 3 prior to performing the SR. The MSSVs may be either bench tested or tested in situ at hot conditions using an assist device to simulate lift pressure. If the MSSVs are not tested at hot conditions, the lift setting pressure shall be corrected to ambient conditions of the valve at operating temperature and pressure.

REFERENCES

1. FSAR, Section [5.2].
2. ASME, Boiler and Pressure Vessel Code, Section III, Article NC-7000, Class 2 Components.
3. FSAR, Section [15.2].
4. ASME Code for Operation and Maintenance of Nuclear Power Plants.
5. ANSI/ASME OM-1-1987.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.2.1

This SR verifies that the closure time of each MSIV is within the limit given in Reference 5 and is within that assumed in the accident and containment analyses. This SR also verifies the valve closure time is in accordance with the **ASME Code**~~INSERVICE TESTING PROGRAM~~. This SR is normally performed upon returning the unit to operation following a refueling outage, because the MSIVs should not be tested at power since even a part stroke exercise increases the risk of a valve closure with the unit generating power. As the MSIVs are not to be tested at power, they are exempt from the ASME Code (Ref. 6) requirements during operation in MODES 1 and 2.

~~The Frequency for this SR is in accordance with the INSERVICE TESTING PROGRAM.~~ **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**

This test is conducted in MODE 3, with the unit at operating temperature and pressure. This SR is modified by a Note that allows entry into and operation in MODE 3 prior to performing the SR. This allows delaying testing until MODE 3 in order to establish conditions consistent with those under which the acceptance criterion was generated.

SR 3.7.2.2

This SR verifies that each MSIV can close on an actual or simulated actuation signal. This Surveillance is normally performed upon returning the plant to operation following a refueling outage. [The Frequency of MSIV testing is every [18] months. The [18] month Frequency for testing is based on the refueling cycle. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, this Frequency is acceptable from a reliability standpoint.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.3.1

This SR verifies that the closure time of each [MFSV], [MFCV], and [associated SFCV] is within the limit given in Reference 2 and is within that assumed in the accident and containment analyses. ~~This SR also verifies the valve closure time is in accordance with the INSERVICE TESTING PROGRAM.~~ This SR is normally performed upon returning the unit to operation following a refueling outage. The [MFSV], [MFCV], and [associated SFCV] should not be tested at power since even a part stroke exercise increases the risk of a valve closure with the unit generating power. This is consistent with the ASME Code (Ref. 3) requirements during operation in MODES 1 and 2.

This SR is modified by a Note that allows entry into and operation in MODE 3 prior to performing the SR.

~~The Frequency for this SR is in accordance with the INSERVICE TESTING PROGRAM.~~ **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**

SR 3.7.3.2

This SR verifies that each [MFSV, MFCV, and associated SFCV] can close on an actual or simulated actuation signal. This Surveillance is normally performed upon returning the plant to operation following a refueling outage.

[The Frequency for this SR is every [18] months. The [18] month Frequency for testing is based on the refueling cycle. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, this Frequency is acceptable from a reliability standpoint.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

BASES

SURVEILLANCE REQUIREMENTS (continued)

to locking, sealing, or securing. This SR also does not apply to valves that cannot be inadvertently misaligned, such as check valves. This Surveillance does not require any testing or valve manipulation; rather, it involves verification that those valves capable of potentially being mispositioned are in the correct position.

[The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.7.5.2

Verifying that each EFW pump's developed head at the flow test point is greater than or equal to the required developed head ensures that EFW pump performance has not degraded during the cycle. Flow and differential head are normal tests of pump performance required by the ASME Code (Ref. 3). Because it is undesirable to introduce cold EFW into the steam generators while they are operating, this test is performed on recirculation flow.

This test confirms one point on the pump design curve and is indicative of overall performance. Such ~~inservice~~ tests confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. Performance of ~~inservice~~ **this** testing ~~as~~ **is** discussed in the ASME Code (Ref. 3) ~~and the INSERVICE TESTING PEROGRAM, satisfies this requirement~~. **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**

This SR is modified by a Note indicating that the SR should be deferred until suitable test conditions are established. This deferral is required because there is insufficient steam pressure to perform the test.

BASES

SURVEILLANCE REQUIREMENTS (continued)

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

As such, this Surveillance ensures that a postulated fuel handling accident [involving handling recently irradiated fuel] that releases fission product radioactivity within the containment will not result in a release of significant fission product radioactivity to the environment in excess of those recommended by Standard Review Plan Section 15.7.4 (Ref. 3).

SR 3.9.3.2

This Surveillance demonstrates that each containment purge and exhaust valve actuates to its isolation position on manual initiation or on an actual or simulated high radiation signal. [The 18 month Frequency maintains consistency with other similar ESFAS instrumentation and valve testing requirements. In LCO 3.3.15, "RB Purge Isolation - High Radiation," the isolation instrumentation requires a CHANNEL CHECK every 12 hours and a CHANNEL FUNCTIONAL TEST every 92 days to ensure the channel OPERABILITY during refueling operations. Every 18 months a CHANNEL CALIBRATION is performed. The system actuation response time is demonstrated every 18 months, during refueling, on a STAGGERED TEST BASIS.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.3.5 demonstrates that the isolation time of each valve is in accordance with the ~~INSERVICE TESTING PROGRAM~~ requirements. These Surveillances performed during MODE 6 will ensure that the

1.1 Definitions

DOSE EQUIVALENT I-131 (continued)

d. Table 2.1 of EPA Federal Guidance Report No. 11, 1988, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion."

OR

Committed Dose Equivalent (CDE) or Committed Effective Dose Equivalent (CEDE) dose conversion factors from Table 2.1 of EPA Federal Guidance Report No. 11.]

DOSE EQUIVALENT XE-133

DOSE EQUIVALENT XE-133 shall be that concentration of Xe-133 (microcuries per gram) that alone would produce the same acute dose to the whole body as the combined activities of noble gas nuclides [Kr-85m, Kr-85, Kr-87, Kr-88, Xe-131m, Xe-133m, Xe-133, Xe-135m, Xe-135, and Xe-138] actually present. If a specific noble gas nuclide is not detected, it should be assumed to be present at the minimum detectable activity. The determination of DOSE EQUIVALENT XE-133 shall be performed using [effective dose conversion factors for air submersion listed in Table III.1 of EPA Federal Guidance Report No. 12, 1993, "External Exposure to Radionuclides in Air, Water, and Soil" or the average gamma disintegration energies as provided in ICRP Publication 38, "Radionuclide Transformations" or similar source].

ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME

The ESF RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays, where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC, or the components have been evaluated in accordance with an NRC approved methodology.

~~**INSERVICE TESTING PROGRAM**~~

~~The INSERVICE TESTING PROGRAM is the licensee program that fulfills the requirements of 10 CFR 50.55a(f).~~

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.10.1	Verify each pressurizer safety valve is OPERABLE ~~in accordance with the INSERVICE TESTING PROGRAM~~. Following testing, lift settings shall be within ± 1%.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.14.1	----------NOTES---------- 1. Not required to be performed in MODES 3 and 4. 2. Not required to be performed on the RCS PIVs located in the RHR flow path when in the shutdown cooling mode of operation. 3. RCS PIVs actuated during the performance of this Surveillance are not required to be tested more than once if a repetitive testing loop cannot be avoided. ----------	
	Verify leakage from each RCS PIV is equivalent to ≤ 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm at an RCS pressure ≥ [2215] psig and ≤ [2255] psig.	~~In accordance with the INSERVICE TESTING PROGRAM, and~~ [[18] months <u>OR</u> In accordance with the Surveillance Frequency Control Program] <u>AND</u> Prior to entering MODE 2 whenever the unit has been in MODE 5 for 7 days or more, if leakage testing has not been performed in the previous 9 months <u>AND</u>

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.3	Verify ECCS locations susceptible to gas accumulation are sufficiently filled with water.	[31 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.5.2.4	Verify each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~
SR 3.5.2.5	Verify each ECCS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[[18] months OR In accordance with the Surveillance Frequency Control Program]
SR 3.5.2.6	Verify each ECCS pump starts automatically on an actual or simulated actuation signal.	[[18] months OR In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.4	----------NOTE---------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. ---------- Verify each containment isolation manual valve and blind flange that is located inside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days
SR 3.6.3.5	Verify the isolation time of each automatic power operated containment isolation valve is within limits.	~~[In accordance with the INSERVICE TESTING PROGRAM~~ ~~OR~~ [92 days~~]~~ OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.3.6	[Cycle each weight or spring loaded check valve testable during operation through one complete cycle of full travel, and verify each check valve remains closed when the differential pressure in the direction of flow is ≤ [1.2] psid and opens when the differential pressure in the direction of flow is ≥ [1.2] psid and < [5.0] psid.	[92 days OR In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6A.4	Verify containment spray locations susceptible to gas accumulation are sufficiently filled with water.	[31 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.6A.5	Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~
SR 3.6.6A.6	Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[[18] months OR In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6B.3	Verify each [required] containment cooling train cooling water flow rate is ≥ [700] gpm.	[31 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.6B.4	Verify containment spray locations susceptible to gas accumulation are sufficiently filled with water.	[31 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.6B.5	Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~
SR 3.6.6B.6	Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[[18] months OR In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6C.1	----------NOTE---------- Not required to be met for system vent flow paths opened under administrative control. ---------- Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	[31 days <u>OR</u> In accordance with the Surveillance Frequency Control Program]
SR 3.6.6C.2	Verify containment spray locations susceptible to gas accumulation are sufficiently filled with water.	[31 days <u>OR</u> In accordance with the Surveillance Frequency Control Program]
SR 3.6.6C.3	Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~
SR 3.6.6C.4	Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[[18] months <u>OR</u> In accordance with the Surveillance

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6D.1	----------NOTE---------- Not required to be met for system vent flow paths opened under administrative control. ---------- Verify each QS manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	[31 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.6D.2	Verify QS locations susceptible to gas accumulation are sufficiently filled with water.	[31 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.6D.3	Verify each QS pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~
SR 3.6.6D.4	Verify each QS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[[18] months OR In accordance with the Surveillance

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6E.4	----------NOTE---------- Not required to be met for system vent flow paths opened under administrative control. ---------- Verify each RS [and casing cooling] manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	[31 days <u>OR</u> In accordance with the Surveillance Frequency Control Program]
SR 3.6.6E.5	Verify RS locations susceptible to gas accumulation are sufficiently filled with water.	[31 days <u>OR</u> In accordance with the Surveillance Frequency Control Program]
SR 3.6.6E.6	Verify each RS [and casing cooling] pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~

3.6 CONTAINMENT SYSTEMS

3.6.12 Vacuum Relief Valves (Atmospheric and Ice Condenser)

LCO 3.6.12 [Two] vacuum relief lines shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One vacuum relief line inoperable.	A.1 Restore vacuum relief line to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 ---------- NOTE ---------- LCO 3.0.4.a is not applicable when entering MODE 4. ---------- Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.12.1	Verify each vacuum relief line is OPERABLE ~~in accordance with the INSERVICE TESTING PROGRAM~~.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	B.2 ----------NOTE---------- Only required in MODE 1. ---------- Reduce the Power Range Neutron Flux - High reactor trip setpoint to less than or equal to the Maximum Allowable % RTP specified in Table 3.7.1-1 for the number of OPERABLE MSSVs.	36 hours
C. Required Action and associated Completion Time not met. OR One or more steam generators with ≥ [4] MSSVs inoperable.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.1.1	----------NOTE---------- Only required to be performed in MODES 1 and 2. ---------- Verify each required MSSV lift setpoint per Table 3.7.1-2 ~~in accordance with the INSERVICE TESTING PROGRAM~~. Following testing, lift setting shall be within ±1%.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	----------NOTE---------- Only required to be performed in MODES 1 and 2. ---------- Verify the isolation time of each MSIV is within limits.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~
SR 3.7.2.2	----------NOTE---------- Only required to be performed in MODES 1 and 2. ---------- Verify each MSIV actuates to the isolation position on an actual or simulated actuation signal.	[[18] months <u>OR</u> In accordance with the Surveillance Frequency Control Program]

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two valves in the same flow path inoperable.	D.1 Isolate affected flow path.	8 hours
E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3. [AND E.2 Be in MODE 4.	6 hours 12 hours]

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Verify the isolation time of each MFIV, MFRV[, and associated bypass valve] is within limits.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~
SR 3.7.3.2	Verify each MFIV, MFRV[, and associated bypass valves] actuates to the isolation position on an actual or simulated actuation signal.	[[18] months OR In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.5.2	----------NOTE---------- [Not required to be performed for the turbine driven AFW pump until [24 hours] after ≥ [1000] psig in the steam generator.] ---------- Verify the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~
SR 3.7.5.3	----------NOTE---------- [AFW train(s) may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation.] ---------- Verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[[18] months OR In accordance with the Surveillance Frequency Control Program]

5.5 Programs and Manuals

5.5.2 Primary Coolant Sources Outside Containment

This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. The systems include [Recirculation Spray, Safety Injection, Chemical and Volume Control, gas stripper, and Hydrogen Recombiner]. The program shall include the following:

a. Preventive maintenance and periodic visual inspection requirements and

b. Integrated leak test requirements for each system at **a Frequency in accordance with the Surveillance Frequency Control Program** ~~least once per [18] months~~.

The provisions of SR 3.0.2 are applicable.

[5.5.3 Post Accident Sampling

----------REVIEWER'S NOTE----------
This program may be eliminated based on the implementation of WCAP-14986, Rev. 1, "Post Accident Sampling System Requirements: A Technical Basis," and the associated NRC Safety Evaluation dated June 14, 2000, and implementation of the following commitments:

1. [Licensee] has developed contingency plans for obtaining and analyzing highly radioactive samples of reactor coolant, containment sump, and containment atmosphere. The contingency plans will be contained in emergency plan implementing procedures and implemented with the implementation of the License amendment. Establishment of contingency plans is considered a regulatory commitment.

2. The capability for classifying fuel damage events at the Alert level threshold has been established for [Plant] at radioactivity levels of 300 µCi/cc dose equivalent iodine. This capability may utilize the normal sampling system and/or correlations of sampling or letdown line dose rates to coolant concentrations. This capability will be described in emergency plan implementing procedures and implemented with the implementation of the License amendment. The capability for classifying fuel damage events is considered a regulatory commitment.

3. [Licensee] has established the capability to monitor radioactive iodines that have been released to offsite environs. This capability is described in our emergency plan implementing procedures. The capability to monitor radioactive iodines is considered a regulatory commitment.

This program provides controls that ensure the capability to obtain and analyze reactor coolant, radioactive gases, and particulates in plant gaseous effluents

5.5 Programs and Manuals

5.5.9 Secondary Water Chemistry Program

This program provides controls for monitoring secondary water chemistry to inhibit SG tube degradation and low pressure turbine disc stress corrosion cracking. The program shall include:

a. Identification of a sampling schedule for the critical variables and control points for these variables,

b. Identification of the procedures used to measure the values of the critical variables,

c. Identification of process sampling points, which shall include monitoring the discharge of the condensate pumps for evidence of condenser in leakage,

d. Procedures for the recording and management of data,

e. Procedures defining corrective actions for all off control point chemistry conditions, and

f. A procedure identifying the authority responsible for the interpretation of the data and the sequence and timing of administrative events, which is required to initiate corrective action.

5.5.10 Ventilation Filter Testing Program (VFTP)

A program shall be established to implement the following required testing of Engineered Safety Feature (ESF) filter ventilation systems at the **periodic F**~~f~~requencies **in accordance with the Surveillance Frequency Control Program and the event-based frequencies** specified in [Regulatory Guide], and in accordance with [Regulatory Guide 1.52, Revision 2, ASME N510-1989, and AG-1].

a. Demonstrate for each of the ESF systems that an inplace test of the high efficiency particulate air (HEPA) filters shows a penetration and system bypass < [0.05]% when tested in accordance with [Regulatory Guide 1.52, Revision 2, and ASME N510-1989] at the system flowrate specified below [± 10%].

ESF Ventilation System	Flowrate
[ ]	[ ]

5.5 Programs and Manuals

5.5.11 Explosive Gas and Storage Tank Radioactivity Monitoring Program (continued)

The program shall include:

a. The limits for concentrations of hydrogen and oxygen in the [Waste Gas Holdup System] and a surveillance program to ensure the limits are maintained. Such limits shall be appropriate to the system's design criteria (i.e., whether or not the system is designed to withstand a hydrogen explosion),

b. A surveillance program to ensure that the quantity of radioactivity contained in [each gas storage tank and fed into the offgas treatment system] is less than the amount that would result in a whole body exposure of ≥ 0.5 rem to any individual in an unrestricted area, in the event of [an uncontrolled release of the tanks' contents], and

c. A surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes, or walls, capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the [Liquid Radwaste Treatment System] is less than the amount that would result in concentrations less than the limits of 10 CFR 20, Appendix B, Table 2, Column 2, at the nearest potable water supply and the nearest surface water supply in an unrestricted area, in the event of an uncontrolled release of the tanks' contents.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program surveillance frequencies.

5.5.12 Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:

a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:

   1. An API gravity or an absolute specific gravity within limits,

   2. A flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and

   3. A clear and bright appearance with proper color or a water and sediment content within limits.

5.5 Programs and Manuals

5.5.12 Diesel Fuel Oil Testing Program (continued)

b. Within 31 days following addition of the new fuel oil to storage tanks, verify that the properties of the new fuel oil, other than those addressed in a., above, are within limits for ASTM 2D fuel oil, and

c. Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested **at a Frequency in accordance with the Surveillance Frequency Control Program.**~~every 31 days.~~

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program test frequencies.

5.5.13 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.

b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:

1. A change in the TS incorporated in the license or

2. A change to the updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.

d. Proposed changes that meet the criteria of Specification 5.5.13b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

5.5 Programs and Manuals

5.5.16 Battery Monitoring and Maintenance Program (continued)

3. In lieu of RG 1.129, Regulatory Position 2, Subsection 5.2, "Inspections," the following shall be used: "Where reference is made to the pilot cell, pilot cell selection shall be based on the lowest voltage cell in the battery."

4 In Regulatory Guide 1.129, Regulatory Position 3, Subsection 5.4.1, "State of Charge Indicator," the following statements in paragraph (d) may be omitted: "When it has been recorded that the charging current has stabilized at the charging voltage for three consecutive hourly measurements, the battery is near full charge. These measurements shall be made after the initially high charging current decreases sharply and the battery voltage rises to approach the charger output voltage."

5. In lieu of RG 1.129, Regulatory Position 7, Subsection 7.6, "Restoration," the following may be used: "Following the test, record the float voltage of each cell of the string."

b. The program shall include the following provisions:

1. Actions to restore battery cells with float voltage < [2.13] V;

2. Actions to determine whether the float voltage of the remaining battery cells is ≥ [2.13] V when the float voltage of a battery cell has been found to be < [2.13] V;

3. Actions to equalize and test battery cells that had been discovered with electrolyte level below the top of the plates;

4. Limits on average electrolyte temperature, battery connection resistance, and battery terminal voltage; and

5. A requirement to obtain specific gravity readings of all cells at each discharge test, consistent with manufacturer recommendations.

5.5.17 Control Room Envelope (CRE) Habitability Program

A Control Room Envelope (CRE) Habitability Program shall be established and implemented to ensure that CRE habitability is maintained such that, with an OPERABLE Control Room Emergency Filtration System (CREFS), CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of [5 rem whole body or its equivalent to any part of the body] [5 rem total

5.5 Programs and Manuals

5.5.17 Control Room Envelope (CRE) Habitability Program (continued)

effective dose equivalent (TEDE)] for the duration of the accident. The program shall include the following elements:

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

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

c. Requirements for (i) determining the unfiltered air inleakage past the CRE boundary into the CRE **at the periodic Frequencies in accordance with the Surveillance Frequency Control Program and** in accordance with the testing methods and at the **event-driven f**~~F~~requencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003, and (ii) assessing CRE habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.

[The following are exceptions to Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0:

1. ;and]

d. Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one train of the CREFS, operating at the flow rate required by the VFTP, at **a Frequency in accordance with the Surveillance Frequency Control Program**~~a Frequency of [18] months on a STAGGERED TEST BASIS~~. The results shall be trended and used as part of the **periodic** ~~[18] month~~ assessment of the CRE boundary.

e. The quantitative limits on unfiltered air inleakage into the CRE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air inleakage measured by the testing described in paragraph c. The unfiltered air inleakage limit for radiological challenges is the inleakage flow rate assumed in the licensing basis analyses of DBA consequences. Unfiltered air inleakage limits for hazardous chemicals must ensure that exposure of CRE occupants to these hazards will be within the assumptions in the licensing basis.

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

5.5 Programs and Manuals

5.5.18 Setpoint Control Program (continued)

2. If the as-found value of the instrument channel trip setting differs from the previous as-left value or the specified NTSP by more than the pre-defined test acceptance criteria band (i.e., the specified AFT), then the instrument channel shall be evaluated before declaring the SR met and returning the instrument channel to service. This condition shall be entered in the plant corrective action program.

3. If the as-found value of the instrument channel trip setting is less conservative than the specified AV, then the SR is not met and the instrument channel shall be immediately declared inoperable.

4. The instrument channel setpoint shall be reset to a value that is within the as-left tolerance around the NTSP at the completion of the surveillance test; otherwise, the channel is inoperable (setpoints may be more conservative than the NTSP provided that the as-found and as-left tolerances apply to the actual setpoint used to confirm channel performance).

e. The program shall be specified in [insert the facility FSAR reference or the name of any document incorporated into the facility FSAR by reference].]

[5.5.19 Surveillance Frequency Control Program

This program provides controls for Surveillance Frequencies. The program shall ensure that Surveillance Requirements specified in the Technical Specifications are performed at intervals sufficient to assure the associated Limiting Conditions for Operation are met.

a. The Surveillance Frequency Control Program shall contain a list of Frequencies of those Surveillance Requirements for which the Frequency is controlled by the program.

b. Changes to the Frequencies listed in the Surveillance Frequency Control Program shall be made**:**

1. In accordance with the requirements of 10 CFR 50.55a for Frequencies required by 10 CFR 50.55a(f);

2. In accordance with the requirements of 10 CFR 50.69(d)(2) for the Frequencies of testing permitted under 10 CFR 50.69(b)(1)(v) in lieu of testing required by 10 CFR 50.55a(f);

3. Otherwise, in accordance with NEI 04-10, "Risk-Informed Method for Control of Surveillance Frequencies," Revision 1.

c. The provisions of Surveillance Requirements 3.0.2 and 3.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program.]

[5.5.20 Risk Informed Completion Time Program

This program provides controls to calculate a Risk Informed Completion Time (RICT) and must be implemented in accordance with NEI 06-09-A, Revision 0, "Risk-Managed Technical Specifications (RMTS) Guidelines." The program shall include the following:

BASES

SURVEILLANCE REQUIREMENTS

SR 3.4.10.1

~~SRs are specified in the INSERVICE TESTING PROGRAM.~~ Pressurizer safety valves are ~~to be~~ tested in accordance with the requirements of the ASME Code (Ref. 4), which provides the activities ~~and Frequencies~~ necessary to satisfy the SR~~s~~. **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**~~No additional requirements are specified.~~

The pressurizer safety valve setpoint is ± [3]% for OPERABILITY; however, the valves are reset to ± 1% during the Surveillance to allow for drift.

REFERENCES

1. ASME, Boiler and Pressure Vessel Code, Section III.
2. FSAR, Chapter [15].
3. WCAP-7769, Rev. 1, June 1972.
4. ASME Code for Operation and Maintenance of Nuclear Power Plants.

BASES

SURVEILLANCE REQUIREMENTS (continued)

The [HPI] pump[s] and charging pump[s] are rendered incapable of injecting into the RCS through removing the power from the pumps by racking the breakers out under administrative control. An alternate method of LTOP control may be employed using at least two independent means to prevent a pump start such that a single failure or single action will not result in an injection into the RCS. This may be accomplished through the pump control switch being placed in [pull to lock] and at least one valve in the discharge flow path being closed.

[The Frequency of 12 hours is sufficient, considering other indications and alarms available to the operator in the control room, to verify the required status of the equipment.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

[SR 3.4.12.4

Each required RHR suction relief valve shall be demonstrated OPERABLE by verifying its RHR suction valve and RHR suction isolation valves are open. ~~and by testing it in accordance with the INSERVICE TESTING PROGRAM.~~ (Refer to SR 3.4.12.7 for the RHR suction isolation valve Surveillance.) This Surveillance is only required to be performed if the RHR suction relief valve is being used to meet this LCO.

The RHR suction valve is verified to be opened. [The Frequency of 12 hours is considered adequate in view of other administrative controls such as valve status indications available to the operator in the control room that verify the RHR suction valve remains open.

OR

BASES

SURVEILLANCE REQUIREMENTS (continued)

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

~~The ASME Code (Ref. 8), test per INSERVICE TESTING PROGRAM verifies OPERABILITY by proving proper relief valve mechanical motion and by measuring and, if required, adjusting the lift setpoint.]~~

SR 3.4.12.5

The RCS vent of ≥ [2.07] square inches is proven OPERABLE by verifying its open condition [either:

a. Once every 12 hours for a valve that is not locked (valves that are sealed or secured in the open position are considered "locked" in this context) or

b. Once every 31 days for other vent path(s) (e.g., a vent valve that is locked, sealed, or secured in position). A removed pressurizer safety valve or open manway also fits this category.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

BASES

SURVEILLANCE REQUIREMENTS (continued)

The passive vent path arrangement must only be open to be OPERABLE. This Surveillance is required to be met if the vent is being used to satisfy the pressure relief requirements of the LCO 3.4.12d.

SR 3.4.12.6

The PORV block valve must be verified open to provide the flow path for each required PORV to perform its function when actuated. The valve must be remotely verified open in the main control room. [This Surveillance is performed if the PORV satisfies the LCO.]

The block valve is a remotely controlled, motor operated valve. The power to the valve operator is not required removed, and the manual operator is not required locked in the inactive position. Thus, the block valve can be closed in the event the PORV develops excessive leakage or does not close (sticks open) after relieving an overpressure situation.

[The 72 hour Frequency is considered adequate in view of other administrative controls available to the operator in the control room, such as valve position indication, that verify that the PORV block valve remains open.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

[SR 3.4.12.7

Each required RHR suction relief valve shall be demonstrated OPERABLE by verifying its RHR suction valve and RHR suction isolation valve are open. ~~and by testing it in accordance with the INSERVICE TESTING PROGRAM~~. (Refer to SR 3.4.12.4 for the RHR suction valve Surveillance ~~and for a description of the requirements of the INSERVICE TESTING PROGRAM~~.) This Surveillance is only performed if the RHR suction relief valve is being used to satisfy this LCO.]

BASES

SURVEILLANCE REQUIREMENTS (continued)

The RHR suction isolation valve is verified locked open, with power to the valve operator removed, to ensure that accidental closure will not occur. The "locked open" valve must be locally verified in its open position with the manual actuator locked in its inactive position. [The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve position.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.4.12.8

Performance of a COT is required within 12 hours after decreasing RCS temperature to ≤ [275°F] [LTOP arming temperature specified in the PTLR] and every 31 days on each required PORV to verify and, as necessary, adjust its lift setpoint. A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable COT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions. The COT will verify the setpoint is within the PTLR allowed maximum limits in the PTLR. PORV actuation could depressurize the RCS and is not required.

The 12 hour Frequency considers the unlikelihood of a low temperature overpressure event during this time. [The 31 day Frequency considers experience with equipment reliability.

OR

BASES

REFERENCES (continued)

3. ASME, Boiler and Pressure Vessel Code, Section III.

4. FSAR, Chapter [15].

5. 10 CFR 50, Section 50.46.

6. 10 CFR 50, Appendix K.

7. Generic Letter 90-06.

~~8. ASME Code for Operation and Maintenance of Nuclear Power Plants.~~

BASES

ACTIONS (continued)

Required Action B.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

The allowed Completion 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.

C.1

The inoperability of the RHR autoclosure interlock renders the RHR suction isolation valves incapable of isolating in response to a high pressure condition and preventing inadvertent opening of the valves at RCS pressures in excess of the RHR systems design pressure. If the RHR autoclosure interlock is inoperable, operation may continue as long as the affected RHR suction penetration is closed by at least one closed manual or deactivated automatic valve within 4 hours. This Action accomplishes the purpose of the autoclosure function.

SURVEILLANCE REQUIREMENTS

SR 3.4.14.1

Performance of leakage testing on each RCS PIV or isolation valve used to satisfy Required Action A.1 and Required Action A.2 is required to verify that leakage is below the specified limit and to identify each leaking valve. The leakage limit of 0.5 gpm per inch of nominal valve diameter up to 5 gpm maximum applies to each valve. Leakage testing requires a stable pressure condition.

For the two PIVs in series, the leakage requirement applies to each valve individually and not to the combined leakage across both valves. If the PIVs are not individually leakage tested, one valve may have failed completely and not be detected if the other valve in series meets the leakage requirement. In this situation, the protection provided by redundant valves would be lost.

BASES

SURVEILLANCE REQUIREMENTS (continued)

Testing is to be performed every [9] months, but may be extended, if the plant does not go into MODE 5 for at least 7 days.

[The [18 month] Frequency is consistent with 10 CFR 50.55a(**f**~~g~~) (Ref. 9) ~~and the INSERVICE TESTING PROGRAM, is within frequency~~ **as** allowed by the American Society of Mechanical Engineers (ASME) Code (Ref. 8), and is based on the need to perform such surveillances under the conditions that apply during an outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

OR

The Surveillance Frequency is **[is based on the requirements of 10 CFR 50.55a(f), and]** controlled under the Surveillance Frequency Control Program. ~~[The [18 month] Frequency is consistent with 10 CFR 50.55a(g) (Ref. 9) and the Inservice Testing Program, is within frequency allowed by the American Society of Mechanical Engineers (ASME) Code (Ref. 8), and is based on the need to perform such surveillances under the conditions that apply during an outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.~~**]**

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

In addition, testing must be performed once after the valve has been opened by flow or exercised to ensure tight reseating. PIVs disturbed in the performance of this Surveillance should also be tested unless documentation shows that an infinite testing loop cannot practically be avoided. Testing must be performed within 24 hours after the valve has been reseated. Within 24 hours is a reasonable and practical time limit for performing this test after opening or reseating a valve.

The leakage limit is to be met at the RCS pressure associated with MODES 1 and 2. This permits leakage testing at high differential pressures with stable conditions not possible in the MODES with lower pressures.

Entry into MODES 3 and 4 is allowed to establish the necessary differential pressures and stable conditions to allow for performance of this Surveillance. The Note that allows this provision is complementary to

BASES

SURVEILLANCE REQUIREMENTS (continued)

ECCS locations susceptible to gas accumulation are monitored and, if gas is found, the gas volume is compared to the acceptance criteria for the location. Susceptible locations in the same system flow path which are subject to the same gas intrusion mechanisms may be verified by monitoring a representative sub-set of susceptible locations. Monitoring may not be practical for locations that are inaccessible due to radiological or environmental conditions, the plant configuration, or personnel safety. For these locations alternative methods (e.g., operating parameters, remote monitoring) may be used to monitor the susceptible location. Monitoring is not required for susceptible locations where the maximum potential accumulated gas void volume has been evaluated and determined to not challenge system OPERABILITY. The accuracy of the method used for monitoring the susceptible locations and trending of the results should be sufficient to assure system OPERABILITY during the Surveillance interval.

[The 31 day Frequency takes into consideration the gradual nature of gas accumulation in the ECCS piping and the procedural controls governing system operation.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. The Surveillance Frequency may vary by location susceptible to gas accumulation.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.5.2.4

Periodic surveillance testing of ECCS pumps to detect gross degradation caused by impeller structural damage or other hydraulic component problems is required by the ASME Code. This type of testing may be accomplished by measuring the pump developed head at only one point of the pump characteristic curve. This verifies both that the measured performance is within an acceptable tolerance of the original pump

SURVEILLANCE REQUIREMENTS (continued)

baseline performance and that the performance at the test flow is greater than or equal to the performance assumed in the plant safety analysis. **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.** ~~SRs are specified in the INSERVICE TESTING PROGRAM.~~ The ASME Code provides the activities ~~and Frequencies~~ necessary to satisfy the requirements.

SR 3.5.2.5 and SR 3.5.2.6

These Surveillances demonstrate that each automatic ECCS valve actuates to the required position on an actual or simulated SI signal and that each ECCS pump starts on receipt of an actual or simulated SI signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. [The 18 month Frequency is based on the need to perform these Surveillances under the conditions that apply during a plant outage and the potential for unplanned plant transients if the Surveillances were performed with the reactor at power. The 18 month Frequency is also acceptable based on consideration of the design reliability (and confirming operating experience) of the equipment. The actuation logic is tested as part of ESF Actuation System testing~~, and equipment performance is monitored as part of the INSERVICE TESTING PROGRAM~~.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.5.2.7

Realignment of valves in the flow path on an SI signal is necessary for proper ECCS performance. These valves have stops to allow proper positioning for restricted flow to a ruptured cold leg, ensuring that the other cold legs receive at least the required minimum flow. This Surveillance is not required for plants with flow limiting orifices. [The

BASES

SURVEILLANCE REQUIREMENTS (continued)

This Note allows valves and blind flanges located in high radiation areas to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, 3, and 4, for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in their proper position, is small.

SR 3.6.3.5

Verifying that the isolation time of each automatic power operated containment isolation valve is within limits is required to demonstrate OPERABILITY. The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analyses.

~~----------REVIEWER'S NOTE----------~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of 92 days or the reference to the Surveillance Frequency Control Program should be used.~~
~~----------~~

[The ~~[isolation time and]~~ Frequency of this SR is ~~in accordance with [the INSERVICE TESTING PROGRAM] [~~92 days.

OR

The Surveillance Frequency **[is based on the requirements of 10 CFR 50.55a(f), and]** is controlled under the Surveillance Frequency Control Program.]]

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

[SR 3.6.3.6

In subatmospheric containments, the check valves that serve a containment isolation function are weight or spring loaded to provide

BASES

SURVEILLANCE REQUIREMENTS (continued)

positive closure in the direction of flow. This ensures that these check valves will remain closed when the inside containment atmosphere returns to subatmospheric conditions following a DBA. SR 3.6.3.6 requires verification of the operation of the check valves that are testable during unit operation. [The Frequency of 92 days is consistent with the ~~INSERVICE TESTING PROGRAM~~ requirement**s of 10 CFR 50.55a(f)** for valve testing on a 92 day Frequency.

OR

The Surveillance Frequency is **[is based on the requirements of 10 CFR 50.55a(f), and]** controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]]

[SR 3.6.3.7

For containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J, Option [A][B], is required to ensure OPERABILITY. Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than do other seal types. [Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), a Frequency of 184 days was established as part of the NRC resolution of Generic Issue B-20, "Containment Leakage Due to Seal Deterioration" (Ref. 5).

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

BASES

SURVEILLANCE REQUIREMENTS (continued)

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.6A.5

Verifying each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head ensures that spray pump performance has not degraded during the cycle. Flow and differential pressure are normal tests of centrifugal pump performance required by the ASME Code (Ref. 9). Since the containment spray pumps cannot be tested with flow through the spray headers, they are tested on recirculation flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such ~~inservice~~ tests confirm component OPERABILITY, trend performance, and detect incipient failures by abnormal performance. ~~The Frequency of the SR is in accordance with the INSERVICE TESTING PROGRAM.~~ **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**

SR 3.6.6A.6 and SR 3.6.6A.7

These SRs require verification that each automatic containment spray valve actuates to its correct position and that each containment spray pump starts upon receipt of an actual or simulated actuation of a containment High-3 pressure signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. [The [18] month Frequency is based on the need to perform these Surveillances under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillances were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillances when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.6B.5

Verifying that each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head ensures that spray pump performance has not degraded during the cycle. Flow and differential pressure are normal tests of centrifugal pump performance required by the ASME Code (Ref. 9). Since the containment spray pumps cannot be tested with flow through the spray headers, they are tested on recirculation flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such ~~inservice~~ inspections confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. ~~The Frequency of this SR is in accordance with the INSERVICE TESTING PROGRAM.~~ **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**

SR 3.6.6B.6 and SR 3.6.6B.7

These SRs require verification that each automatic containment spray valve actuates to its correct position and that each containment spray pump starts upon receipt of an actual or simulated containment High-3 pressure signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. [The [18] month Frequency is based on the need to perform these Surveillances under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillances were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillances when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

Containment Spray System locations susceptible to gas accumulation are monitored and, if gas is found, the gas volume is compared to the acceptance criteria for the location. Susceptible locations in the same system flow path which are subject to the same gas intrusion mechanisms may be verified by monitoring a representative sub-set of susceptible locations. Monitoring may not be practical for locations that are inaccessible due to radiological or environmental conditions, the plant configuration, or personnel safety. For these locations alternative methods (e.g., operating parameters, remote monitoring) may be used to monitor the susceptible location. Monitoring is not required for susceptible locations where the maximum potential accumulated gas void volume has been evaluated and determined to not challenge system OPERABILITY. The accuracy of the method used for monitoring the susceptible locations and trending of the results should be sufficient to assure system OPERABILITY during the Surveillance interval.

[The 31 day Frequency takes into consideration the gradual nature of gas accumulation in the Containment Spray System piping and the procedural controls governing system operation.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. The Surveillance Frequency may vary by location susceptible to gas accumulation.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.6C.3

Verifying that each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head ensures that spray pump performance has not degraded during the cycle. Flow and differential head are normal tests of centrifugal pump performance required by the ASME Code (Ref. 6). Since the containment spray

BASES

SURVEILLANCE REQUIREMENTS (continued)

pumps cannot be tested with flow through the spray headers, they are tested on bypass flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such ~~inservice~~ inspections confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. ~~The Frequency of this SR is in accordance with the INSERVICE TESTING PROGRAM.~~ **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**

SR 3.6.6C.4 and SR 3.6.6C.5

These SRs require verification that each automatic containment spray valve actuates to its correct position and each containment spray pump starts upon receipt of an actual or simulated containment spray actuation signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. [The [18] month Frequency is based on the need to perform these Surveillances under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillances were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillances when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

The surveillance of containment sump isolation valves is also required by SR 3.6.6C.4. A single surveillance may be used to satisfy both requirements.

BASES

SURVEILLANCE REQUIREMENTS (continued)

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. The Surveillance Frequency may vary by location susceptible to gas accumulation.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.6D.3

Verifying that each QS pump's developed head at the flow test point is greater than or equal to the required developed head ensures that QS pump performance has not degraded during the cycle. Flow and differential head are normal tests of centrifugal pump performance required by the ASME Code (Ref. 5). Since the QS System pumps cannot be tested with flow through the spray headers, they are tested on bypass flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such ~~inservice~~ tests confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. ~~The Frequency of this SR is in accordance with the INSERVICE TESTING PROGRAM.~~ **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**

SR 3.6.6D.4 and SR 3.6.6D.5

These SRs ensure that each QS automatic valve actuates to its correct position and each QS pump starts upon receipt of an actual or simulated containment spray actuation signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. [The [18] month Frequency is based on the need to perform these Surveillances under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillances were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillances when performed at an [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

BASES

SURVEILLANCE REQUIREMENTS (continued)

subsequent evaluation that the RS System is not rendered inoperable by the accumulated gas (i.e., the system is sufficiently filled with water), the Surveillance may be declared met. Accumulated gas should be eliminated or brought within the acceptance criteria limits.

RS System locations susceptible to gas accumulation are monitored and, if gas is found, the gas volume is compared to the acceptance criteria for the location. Susceptible locations in the same system flow path which are subject to the same gas intrusion mechanisms may be verified by monitoring a representative sub-set of susceptible locations. Monitoring may not be practical for locations that are inaccessible due to radiological or environmental conditions, the plant configuration, or personnel safety. For these locations alternative methods (e.g., operating parameters, remote monitoring) may be used to monitor the susceptible location. Monitoring is not required for susceptible locations where the maximum potential accumulated gas void volume has been evaluated and determined to not challenge system OPERABILITY. The accuracy of the method used for monitoring the susceptible locations and trending of the results should be sufficient to assure system OPERABILITY during the Surveillance interval.

[The 31 day Frequency takes into consideration the gradual nature of gas accumulation in the RS System piping and the procedural controls governing system operation.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. The Surveillance Frequency may vary by location susceptible to gas accumulation.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.6E.6

Verifying that each RS [and casing cooling] pump's developed head at the flow test point is greater than or equal to the required developed head ensures that these pumps' performance has not degraded during the cycle. Flow and differential head are normal tests of centrifugal pump

BASES

SURVEILLANCE REQUIREMENTS (continued)

performance required by the ASME Code (Ref. 5). Since the QS System pumps cannot be tested with flow through the spray headers, they are tested on bypass flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such ~~inservice~~ tests confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. ~~The Frequency of this SR is in accordance with the INSERVICE TESTING PROGRAM.~~ **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**

SR 3.6.6E.7

These SRs ensure that each automatic valve actuates and that the RS System and casing cooling pumps start upon receipt of an actual or simulated High-High containment pressure signal. Start delay times are also verified for the RS System pumps. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. [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 considered to be acceptable from a reliability standpoint.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.6E.8

This SR ensures that each spray nozzle is unobstructed and that spray coverage of the containment will meet its design bases objective. An air or smoke test is performed through each spray header. [Due to the

BASES

ACTIONS (continued)

----------REVIEWER'S NOTE----------
The following is to be used if a non-Technical Specification alternate hydrogen control function is used to justify this Condition: In addition, the alternate hydrogen control system capability must be verified once per 12 hours thereafter to ensure its continued availability.

[Both] the [initial] verification [and all subsequent verifications] may be performed as an administrative check, by examining logs or other information to determine the availability of the alternate hydrogen control system. It does not mean to perform the Surveillances needed to demonstrate OPERABILITY of the alternate hydrogen control system. If the ability to perform the hydrogen control function is maintained, continued operation is permitted with two HMS trains inoperable for up to 7 days. Seven days is a reasonable time to allow two HMS trains to be inoperable because the hydrogen control function is maintained and because of the low probability of the occurrence of a LOCA that would generate hydrogen in the amounts capable of exceeding the flammability limit.

C.1

If an inoperable HMS 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. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.9.1

Operating each HMS train for ≥ 15 minutes ensures that each train is OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan and/or motor failure, or excessive vibration can be detected for corrective action. [The 92 day Frequency is consistent with ~~INSERVICE TESTING PROGRAM Surveillance Frequencies,~~ operating experience, the known reliability of the fan motors and controls, and the two train redundancy available.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

ACTIONS (continued)

be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective.

Required Action B.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

The allowed Completion 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 3.6.12.1

This SR **verifies the OPERABILITY of the Vacuum Relief Valves** ~~cites the inservice testing program, which establishes the requirement that inservice testing of the ASME Code Class 1, 2, and 3 pumps and valves shall be performed~~ in accordance with the ASME Code (Ref. 3). ~~Therefore, SR Frequency is governed by the INSERVICE TESTING PROGRAM.~~ **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**

REFERENCES

1. FSAR, Section [6.2].

2. WCAP-16294-NP-A, Rev. 1, "Risk-Informed Evaluation of Changes to Technical Specification Required Action Endstates for Westinghouse NSSS PWRs," June 2010.

3. ASME Code for Operation and Maintenance of Nuclear Power Plants.

BASES

APPLICABLE SAFETY ANALYSES (continued)

an RCS heatup event (e.g., turbine trip). Thus, for any number of inoperable MSSVs, it is necessary to reduce the trip setpoint if a positive MTC may exist at partial power conditions, unless it is demonstrated by analysis that a specified reactor power reduction alone is sufficient to prevent overpressurization of the steam system.]

The MSSVs are assumed to have two active and one passive failure modes. The active failure modes are spurious opening, and failure to reclose once opened. The passive failure mode is failure to open upon demand.

The MSSVs satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The accident analysis requires that [five] MSSVs per steam generator be OPERABLE to provide overpressure protection for design basis transients occurring at 102% RTP. The LCO requires that [five] MSSVs per steam generator be OPERABLE in compliance with Reference 2, and the DBA analysis.

The OPERABILITY of the MSSVs is defined as the ability to open upon demand within the setpoint tolerances, to relieve steam generator overpressure, and reseat when pressure has been reduced. The OPERABILITY of the MSSVs is determined by periodic surveillance testing in accordance with the **ASME Code** ~~INSERVICE TESTING PROGRAM~~.

This LCO provides assurance that the MSSVs will perform their designed safety functions to mitigate the consequences of accidents that could result in a challenge to the RCPB, or Main Steam System integrity.

APPLICABILITY

In MODES 1, 2, and 3, [five] MSSVs per steam generator are required to be OPERABLE to prevent Main Steam System overpressurization.

In MODES 4 and 5, there are no credible transients requiring the MSSVs. The steam generators are not normally used for heat removal in MODES 5 and 6, and thus cannot be overpressurized; there is no requirement for the MSSVs to be OPERABLE in these MODES.

BASES

ACTIONS (continued)

The maximum THERMAL POWER corresponding to the heat removal capacity of the remaining OPERABLE MSSVs is determined via a conservative heat balance calculation as described in the attachment to Reference 6, with an appropriate allowance for Nuclear Instrumentation System trip channel uncertainties.

----------REVIEWER'S NOTE----------
To determine the Table 3.7.1-1 Maximum Allowable Power for Required Actions B.1 and B.2 (%RTP), the Maximum NSSS Power calculated using the equation in the Reviewer's Note above is reduced by [9]% RTP to account for Nuclear Instrumentation System trip channel uncertainties.

Required Action B.2 is modified by a Note, indicating that the Power Range Neutron Flux-High reactor trip setpoint reduction is only required in MODE 1. In MODES 2 and 3 the reactor protection system trips specified in LCO 3.3.1, "Reactor Trip System Instrumentation," provide sufficient protection.

The allowed Completion Times are reasonable based on operating experience to accomplish the Required Actions in an orderly manner without challenging unit systems.

C.1 and C.2

If the Required Actions are not completed within the associated Completion Time, or if one or more steam generators have ≥ [4] inoperable MSSVs, 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 4 within 12 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 3.7.1.1

This SR verifies the OPERABILITY of the MSSVs by the verification of each MSSV lift setpoint in accordance with the ~~Inservice Testing Program. The~~ ASME Code (Ref. 4), **which** requires that safety and relief valve tests be performed in accordance with ANSI/ASME OM-1-1987 (Ref. 5). According to Reference 5, the following tests are required:

a. Visual examination,

BASES

SURVEILLANCE REQUIREMENTS (continued)

b. Seat tightness determination,

c. Setpoint pressure determination (lift setting),

d. Compliance with owner's seat tightness criteria, and

e. Verification of the balancing device integrity on balanced valves.

The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program. ~~The ANSI/ASME Standard requires that all valves be tested every 5 years, and a minimum of 20% of the valves be tested every 24 months.~~ The ASME Code specifies the activities ~~and frequencies~~ necessary to satisfy the requirements. Table 3.7.1-2 allows a ± [3]% setpoint tolerance for OPERABILITY; however, the valves are reset to ± 1% during the Surveillance to allow for drift. The lift settings, according to Table 3.7.1-2, correspond to ambient conditions of the valve at nominal operating temperature and pressure.

This SR is modified by a Note that allows entry into and operation in MODE 3 prior to performing the SR. The MSSVs may be either bench tested or tested in situ at hot conditions using an assist device to simulate lift pressure. If the MSSVs are not tested at hot conditions, the lift setting pressure shall be corrected to ambient conditions of the valve at operating temperature and pressure.

REFERENCES

1. FSAR, Section [10.3.1].

2. ASME, Boiler and Pressure Vessel Code, Section III, Article NC-7000, Class 2 Components.

3. FSAR, Section [15.2].

4. ASME Code for Operation and Maintenance of Nuclear Power Plants.

5. ANSI/ASME OM-1-1987.

6. NRC Information Notice 94-60, "Potential Overpressurization of the Main Steam System," August 22, 1994.

BASES

ACTIONS (continued)

C.1 and C.2

Condition C is modified by a Note indicating that separate Condition entry is allowed for each MSIV.

Since the MSIVs are required to be OPERABLE in MODES 2 and 3, the inoperable MSIVs may either be restored to OPERABLE status or closed. When closed, the MSIVs are already in the position required by the assumptions in the safety analysis.

The [8] hour Completion Time is consistent with that allowed in Condition A.

For inoperable MSIVs that cannot be restored to OPERABLE status within the specified Completion Time, but are closed, the inoperable MSIVs must be verified on a periodic basis to be closed. This is necessary to ensure that the assumptions in the safety analysis remain valid. The 7 day Completion Time is reasonable, based on engineering judgment, in view of MSIV status indications available in the control room, and other administrative controls, to ensure that these valves are in the closed position.

D.1 and D.2

If the MSIVs cannot be restored to OPERABLE status or are not closed 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 at least in MODE 3 within 6 hours, and in MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from MODE 2 conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.2.1

This SR verifies that the closure time of each MSIV is within the limit given in Reference 5 and is within that assumed in the accident and containment analyses. This SR also verifies the valve closure time is in accordance with the **ASME Code** ~~INSERVICE TESTING PROGRAM~~. This SR is normally performed upon returning the unit to operation following a refueling outage. The MSIVs should not be tested at power, since even a part stroke exercise increases the risk of a valve closure when the unit is generating power. As the MSIVs are not tested at power, they are exempt from the ASME Code (Ref. 6), requirements during operation in MODE 1 or 2.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~The Frequency is in accordance with the INSERVICE TESTING PROGRAM.~~ **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**

This test is conducted in MODE 3 with the unit at operating temperature and pressure. This SR is modified by a Note that allows entry into and operation in MODE 3 prior to performing the SR. This allows a delay of testing until MODE 3, to establish conditions consistent with those under which the acceptance criterion was generated.

SR 3.7.2.2

This SR verifies that each MSIV can close on an actual or simulated actuation signal. This Surveillance is normally performed upon returning the plant to operation following a refueling outage. [The Frequency of MSIV testing is every [18] months. The [18] month Frequency for testing is based on the refueling cycle. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, this Frequency is acceptable from a reliability standpoint.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

REFERENCES

1. FSAR, Section [10.3].

2. FSAR, Section [6.2].

3. FSAR, Section [15.1.5].

4. 10 CFR 100.11.

5. [Technical Requirements Manual.]

BASES

ACTIONS (continued)

E.1 and E.2

If the MFIV(s) and MFRV(s) and the associated bypass valve(s) cannot be restored to OPERABLE status, or closed, or isolated 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 4 within 12 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 3.7.3.1

This SR verifies that the closure time of each MFIV, MFRV, and [associated bypass valve] is within the limit given in Reference 2 and is within that assumed in the accident and containment analyses. ~~This SR also verifies the valve closure time is in accordance with the INSERVICE TESTING PROGRAM.~~ This SR is normally performed upon returning the unit to operation following a refueling outage. These valves should not be tested at power since even a part stroke exercise increases the risk of a valve closure with the unit generating power. This is consistent with the ASME Code (Ref. 3), ~~quarterly stroke~~ requirements during operation in MODES 1 and 2.

~~The Frequency for this SR is in accordance with the INSERVICE TESTING PROGRAM.~~ **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**

SR 3.7.3.2

This SR verifies that each MFIV, MFRV, and [associated bypass valves] can close on an actual or simulated actuation signal. This Surveillance is normally performed upon returning the plant to operation following a refueling outage.

[The Frequency for this SR is every [18] months. The [18] month Frequency for testing is based on the refueling cycle. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, this Frequency is acceptable from a reliability standpoint.

OR

BASES

SURVEILLANCE REQUIREMENTS (continued)

used during startup, shutdown, hot standby operations, and hot shutdown operations for steam generator level control, and these manual operations are an accepted function of the AFW System, OPERABILITY (i.e., the intended safety function) continues to be maintained.]

[The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.7.5.2

Verifying that each AFW pump's developed head at the flow test point is greater than or equal to the required developed head ensures that AFW pump performance has not degraded during the cycle. Flow and differential head are normal tests of centrifugal pump performance required by the ASME Code (Ref 2). Because it is undesirable to introduce cold AFW into the steam generators while they are operating, this testing is performed on recirculation flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such ~~inservice~~ tests confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. Performance of ~~inservice~~ **this** testing ~~as~~ **is** discussed in the ASME Code (Ref. 2) ~~and the INSERVICE TESTING PROGRAM satisfies this requirement.~~ **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**

[This SR is modified by a Note indicating that the SR should be deferred until suitable test conditions are established. This deferral is required because there is insufficient steam pressure to perform the test.]

BASES

SURVEILLANCE REQUIREMENTS (continued)

[The Surveillance is performed every 7 days during movement of [recently] irradiated fuel assemblies within containment. The Surveillance interval is selected to be commensurate with the normal duration of time to complete fuel handling operations. A surveillance before the start of refueling operations will provide two or three surveillance verifications during the applicable period for this LCO. As such, this Surveillance ensures that a postulated fuel handling accident [involving handling recently irradiated fuel] that releases fission product radioactivity within the containment will not result in a release of significant fission product radioactivity to the environment in excess of those recommended by Standard Review Plan Section 15.7.4 (Reference 3).

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.9.4.2

This Surveillance demonstrates that each containment purge and exhaust valve actuates to its isolation position on manual initiation or on an actual or simulated high radiation signal. [The 18 month Frequency maintains consistency with other similar ESFAS instrumentation and valve testing requirements. In LCO 3.3.6, the Containment Purge and Exhaust Isolation instrumentation requires a CHANNEL CHECK every 12 hours and a COT every 92 days to ensure the channel OPERABILITY during refueling operations. Every 18 months a CHANNEL CALIBRATION is performed. The system actuation response time is demonstrated every 18 months, during refueling, on a STAGGERED TEST BASIS.
SR 3.6.3.5 demonstrates that the isolation time of each valve is in accordance with the ~~INSERVICE TESTING PROGRAM~~ requirements. These Surveillances performed during MODE 6 will ensure that the valves are capable of closing after a postulated fuel handling accident [involving handling recently irradiated fuel] to limit a release of fission product radioactivity from the containment.

1.1 Definitions

ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME (continued)

applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC, or the components have been evaluated in accordance with an NRC approved methodology.

~~INSERVICE TESTING PROGRAM~~ ~~The INSERVICE TESTING PROGRAM is the licensee program that fulfills the requirements of 10 CFR 50.55a(f).~~

LEAKAGE

LEAKAGE shall be:

a. Identified LEAKAGE

1. LEAKAGE, such as that from pump seals or valve packing (except reactor coolant pump (RCP) seal water injection or leakoff), that is captured and conducted to collection systems or a sump or collecting tank;

2. LEAKAGE into the containment atmosphere from sources that are both specifically located and known to not interfere with the operation of leakage detection systems; or

3. Reactor Coolant System (RCS) LEAKAGE through a steam generator to the Secondary System (primary to secondary LEAKAGE);

b. Unidentified LEAKAGE

All LEAKAGE (except RCP seal water injection or leakoff) that is not identified LEAKAGE; and

c. Pressure Boundary LEAKAGE

LEAKAGE (except primary to secondary LEAKAGE) through a fault in an RCS component body, pipe wall, or vessel wall. LEAKAGE past seals, packing, and gaskets is not pressure boundary LEAKAGE.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.10.1	Verify each pressurizer safety valve is OPERABLE ~~in accordance with the INSERVICE TESTING PROGRAM~~. Following testing, lift settings shall be within ± 1%.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.14.1	----------NOTES---------- 1. Not required to be performed in MODES 3 and 4. 2. Not required to be performed on the RCS PIVs located in the SDC flow path when in the shutdown cooling mode of operation. 3. RCS PIVs actuated during the performance of this Surveillance are not required to be tested more than once if a repetitive testing loop cannot be avoided. ----------	
	Verify leakage from each RCS PIV is equivalent to ≤ 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm at an RCS pressure ≥ [2215] psia and ≤ [2255] psia.	~~In accordance with the INSERVICE TESTING PROGRAM, and~~ [[18] months <u>OR</u> In accordance with the Surveillance Frequency Control Program] <u>AND</u> Prior to entering MODE 2 determine the unit has been in MODE 5 for 7 days or more, if leakage testing has not been performed in the previous 9 months <u>AND</u>

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.2	----------NOTE---------- Not required to be met for system vent flow paths opened under administrative control. ---------- Verify each ECCS manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	[31 days <u>OR</u> In accordance with the Surveillance Frequency Control Program]
SR 3.5.2.3	Verify ECCS locations susceptible to gas accumulation are sufficiently filled with water.	[31 days <u>OR</u> In accordance with the Surveillance Frequency Control Program]
SR 3.5.2.4	Verify each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~
SR 3.5.2.5	[Verify each charging pump develops a flow of ≥ [36] gpm at a discharge pressure of ≥ [2200] psig.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.5	Verify the isolation time of each automatic power operated containment isolation valve is within limits.	~~[In accordance with the INSERVICE TESTING PROGRAM~~ ~~OR~~ [92 days ~~]~~ OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.3.6	Perform leakage rate testing for containment purge valves with resilient seals.	[184 days OR In accordance with the Surveillance Frequency Control Program] AND Within 92 days after opening the valve

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6A.3	Verify each containment cooling train cooling water flow rate is ≥ [2000] gpm to each fan cooler.	[31 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.6A.4	[Verify the containment spray piping is full of water to the [100] ft level in the containment spray header.	[31 days OR In accordance with the Surveillance Frequency Control Program]]
SR 3.6.6A.5	Verify containment spray locations susceptible to gas accumulation are sufficiently filled with water.	[31 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.6A.6	Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6B.3	Verify each containment cooling train cooling water flow rate is ≥ [2000] gpm to each fan cooler.	[31 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.6B.4	[Verify the containment spray piping is full of water to the [100] ft level in the containment spray header.	[31 days OR In accordance with the Surveillance Frequency Control Program]]
SR 3.6.6B.5	Verify containment spray locations susceptible to gas accumulation are sufficiently filled with water.	[31 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.6B.6	Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.7.2	Verify spray additive tank solution volume is ≥ [816] gal [90%] and ≤ [896] gal [100%].	[184 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.7.3	Verify spray additive tank [N_2H_4] solution concentration is ≥ [33]% and ≤ [35]% by weight.	[184 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.7.4	[Verify each spray additive pump develops a differential pressure of [100] psid on recirculation flow.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~]
SR 3.6.7.5	Verify each spray additive automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[[18] months OR In accordance with the Surveillance Frequency Control Program]

3.6 CONTAINMENT SYSTEMS

3.6.12 Vacuum Relief Valves (Dual)

LCO 3.6.12 Two vacuum relief lines shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One vacuum relief line inoperable.	A.1 Restore vacuum relief line to OPERABLE status.	72 hours
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 3.6.12.1	Verify each vacuum relief line OPERABLE ~~in accordance with the INSERVICE TESTING PROGRAM~~.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.1.1	----------NOTE---------- Only required to be performed in MODES 1 and 2. ---------- Verify each required MSSV lift setpoint per Table 3.7.1-2 ~~in accordance with the INSERVICE TESTING PROGRAM~~. Following testing, lift settings shall be within ± 1%.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	----------NOTE---------- Only required to be performed in MODES 1 and 2. ---------- Verify the isolation time of each MSIV is within limits.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~
SR 3.7.2.2	----------NOTE---------- Only required to be performed in MODES 1 and 2. ---------- Verify each MSIV actuates to the isolation position on an actual or simulated actuation signal.	[[18] months <u>OR</u> In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Verify the isolation time of each MFIV [and [MFIV] bypass valve] is within limits.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~
SR 3.7.3.2	Verify each MFIV [and [MFIV] bypass valve] actuates to the isolation position on an actual or simulated actuation signal.	[[18] months OR In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.5.2	----------NOTE---------- Not required to be performed for the turbine driven AFW pump until [24] hours after reaching [800] psig in the steam generators. ---------- Verify the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head.	In accordance with the **Surveillance Frequency Control Program** ~~INSERVICE TESTING PROGRAM~~
SR 3.7.5.3	----------NOTES---------- 1. Not required to be performed for the turbine driven AFW pump until [24] hours after reaching [800] psig in the steam generators. 2. Not required to be met in MODE 4 when steam generator is relied upon for heat removal. ---------- Verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[[18] months <u>OR</u> In accordance with the Surveillance Frequency Control Program]

5.5 Programs and Manuals

5.5.2 Primary Coolant Sources Outside Containment

This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. The systems include [Low Pressure Injection, Reactor Building Spray, Makeup and Purification, and Hydrogen Recombiner]. The program shall include the following:

a. Preventive maintenance and periodic visual inspection requirements and

b. Integrated leak test requirements for each system at **a Frequency in accordance with the Surveillance Frequency Control Program** ~~least once per [18] months~~.

The provisions of SR 3.0.2 are applicable.

[5.5.3 Post Accident Sampling

----------REVIEWER'S NOTE----------
This program may be eliminated based on the implementation of Topical Report CE NPSD-1157, Rev. 1, "Technical Justification for the Elimination of the Post-Accident Sampling System from the Plant Design and Licensing Basis for CEOG Utilities," and the associated NRC Safety Evaluation dated May 16, 2000, and implementation of the following commitments:

1. [Licensee] has developed contingency plans for obtaining and analyzing highly radioactive samples of reactor coolant, containment sump, and containment atmosphere. The contingency plans will be contained in emergency plan implementing procedures and implemented with the implementation of the License amendment. Establishment of contingency plans is considered a regulatory commitment.

2. The capability for classifying fuel damage events at the Alert level threshold has been established for [PLANT] at radioactivity levels of 300 µCi/cc dose equivalent iodine. This capability may utilize the normal sampling system and/or correlations of sampling or letdown line dose rates to coolant concentrations. This capability will be described in emergency plan implementing procedures and implemented with the implementation of the License amendment. The capability for classifying fuel damage events is considered a regulatory commitment.

3. [Licensee] has established the capability to monitor radioactive iodines that have been released to offsite environs. This capability is described in our emergency plan implementing procedures. The capability to monitor radioactive iodines is considered a regulatory commitment.

5.5 Programs and Manuals

5.5.9 Secondary Water Chemistry Program (continued)

f. A procedure identifying the authority responsible for the interpretation of the data and the sequence and timing of administrative events, which is required to initiate corrective action.

5.5.10 Ventilation Filter Testing Program (VFTP)

A program shall be established to implement the following required testing of Engineered Safety Feature (ESF) filter ventilation systems at the **periodic F**~~f~~requencies **in accordance with the Surveillance Frequency Control Program and the event-based frequencies** specified in [Regulatory Guide], and in accordance with [Regulatory Guide 1.52, Revision 2, ASME N510-1989, and AG-1] at the system flowrate specified below [± 10%].

a. Demonstrate for each of the ESF systems that an inplace test of the high efficiency particulate air (HEPA) filters shows a penetration and system bypass < [0.05]% when tested in accordance with [Regulatory Guide 1.52, Revision 2, and ASME N510-1989] at the system flowrate specified below [± 10%].

ESF Ventilation System	Flowrate
[ ]	[ ]

b. Demonstrate for each of the ESF systems that an inplace test of the charcoal adsorber shows a penetration and system bypass < [0.05]% when tested in accordance with [Regulatory Guide 1.52, Revision 2, and ASME N510-1989] at the system flowrate specified below [± 10%].

c. Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in [Regulatory Guide 1.52, Revision 2], shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1989 at a temperature of 30°C (86°F) and the relative humidity specified below.

ESF Ventilation System	Penetration	RH	Face Velocity
[ ]	[See Reviewer's Note]	[See Reviewer's Note]	[See Reviewer's Note]

----------REVIEWER'S NOTE----------
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 ability of the charcoal filters to perform in a manner consistent with the licensing basis for the facility is indeterminate.

5.5 Programs and Manuals

5.5.12 Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:

a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:

   1. An API gravity or an absolute specific gravity within limits,

   2. A flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and

   3. A clear and bright appearance with proper color or a water and sediment content within limits,

b. Within 31 days following addition of the new fuel oil to storage tanks, verify that the properties of the new fuel oil, other than those addressed in a., above, are within limits for ASTM 2D fuel oil, and

c. Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested **at a Frequency in accordance with the Surveillance Frequency Control Program.** ~~every 31 days.~~

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program test frequencies.

5.5.13 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.

b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:

   1. A change in the TS incorporated in the license or

   2. A change to the updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.

5.5 Programs and Manuals

5.5.17 Control Room Envelope (CRE) Habitability Program

A Control Room Envelope (CRE) Habitability Program shall be established and implemented to ensure that CRE habitability is maintained such that, with an OPERABLE Control Room Emergency Air Cleanup System (CREACS), CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of [5 rem whole body or its equivalent to any part of the body] [5 rem total effective dose equivalent (TEDE)] for the duration of the accident. The program shall include the following elements:

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

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

c. Requirements for (i) determining the unfiltered air inleakage past the CRE boundary into the CRE **at the periodic Frequencies in accordance with the Surveillance Frequency Control Program and** in accordance with the testing methods and at the **event-driven f**~~F~~requencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003, and (ii) assessing CRE habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.

   [The following are exceptions to Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0:

   1. ;and]

d. Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one train of the CREACS, operating at the flow rate required by the VFTP, at **a Frequency in accordance with the Surveillance Frequency Control Program** ~~a Frequency of [18] months on a STAGGERED TEST BASIS~~. The results shall be trended and used as part of the **periodic** ~~[18] month~~ assessment of the CRE boundary.

5.5 Programs and Manuals

5.5.18 Setpoint Control Program (continued)

3. If the as-found value of the instrument channel trip setting is less conservative than the specified AV, then the SR is not met and the instrument channel shall be immediately declared inoperable.

4. The instrument channel setpoint shall be reset to a value that is within the as-left tolerance around the [LTSP or NTSP] at the completion of the surveillance test; otherwise, the channel is inoperable (setpoints may be more conservative than the [LTSP or NTSP] provided that the as-found and as-left tolerances apply to the actual setpoint used to confirm channel performance).

e. The program shall be specified in [insert the facility FSAR reference or the name of any document incorporated into the facility FSAR by reference].]

[5.5.19 Surveillance Frequency Control Program

This program provides controls for Surveillance Frequencies. The program shall ensure that Surveillance Requirements specified in the Technical Specifications are performed at intervals sufficient to assure the associated Limiting Conditions for Operation are met.

a. The Surveillance Frequency Control Program shall contain a list of Frequencies of those Surveillance Requirements for which the Frequency is controlled by the program.

b. Changes to the Frequencies listed in the Surveillance Frequency Control Program shall be made**:**

1. In accordance with the requirements of 10 CFR 50.55a for Frequencies required by 10 CFR 50.55a(f);

2. In accordance with the requirements of 10 CFR 50.69(d)(2) for the Frequencies of testing permitted under 10 CFR 50.69(b)(1)(v) in lieu of testing required by 10 CFR 50.55a(f);

3. Otherwise, in accordance with NEI 04-10, "Risk-Informed Method for Control of Surveillance Frequencies," Revision 1.

c. The provisions of Surveillance Requirements 3.0.2 and 3.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program.]

[5.5.20 Risk Informed Completion Time Program

This program provides controls to calculate a Risk Informed Completion Time (RICT) and must be implemented in accordance with NEI 06-09-A, Revision 0,

BASES

ACTIONS

A.1

With one pressurizer safety valve inoperable, restoration must take place within 15 minutes. The Completion Time of 15 minutes reflects the importance of maintaining the RCS overpressure protection system. An inoperable safety valve coincident with an RCS overpressure event could challenge the integrity of the RCPB.

B.1 and B.2

If the Required Action cannot be met within the required Completion Time or if two or more pressurizer safety valves are inoperable, the plant must be brought to a MODE in which the requirement does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 with any RCS cold leg temperature less than or equal to the LTOP enable temperature specified in the PTLR within [24] hours. The 6 hours allowed is reasonable, based on operating experience, to reach MODE 3 from full power without challenging plant systems. Similarly, the [24] hours allowed is reasonable, based on operating experience, to reach MODE 4 without challenging plant systems. With any RCS cold leg temperature less than or equal to the LTOP enable temperature specified in the PTLR, overpressure protection is provided by LTOP. The change from MODE 1, 2, or 3 to MODE 4 reduces the RCS energy (core power and pressure), lowers the potential for large pressurizer insurges, and thereby removes the need for overpressure protection by [two] pressurizer safety valves.

SURVEILLANCE REQUIREMENTS

SR 3.4.10.1

~~SRs are specified in the INSERVICE TESTING PROGRAM.~~ Pressurizer safety valves are to be tested in accordance with the requirements of the ASME Code (Ref. 1), which provides the activities ~~and the Frequency~~ necessary to satisfy the SR~~s~~. **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.** ~~No additional requirements are specified.~~

The pressurizer safety valve setpoint is ± [3]% for OPERABILITY; however, the valves are reset to ± 1% during the Surveillance to allow for drift.

REFERENCES

1. ASME Code for Operation and Maintenance of Nuclear Power Plants.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.4.14.1

Performance of leakage testing on each RCS PIV or isolation valve used to satisfy Required Action A.1 or A.2 is required to verify that leakage is below the specified limit and to identify each leaking valve. The leakage limit of 0.5 gpm per inch of nominal valve diameter up to 5 gpm maximum applies to each valve. Leakage testing requires a stable pressure condition.

For the two PIVs in series, the leakage requirement applies to each valve individually and not to the combined leakage across both valves. If the PIVs are not individually leakage tested, one valve may have failed completely and not be detected if the other valve in series meets the leakage requirement. In this situation, the protection provided by redundant valves would be lost.

Testing is to be performed every 9 months, but may be extended if the plant does not go into MODE 5 for at least 7 days.

[The [18] month Frequency is consistent with 10 CFR 50.55a(g) (Ref. 8) ~~and the INSERVICE TESTING PROGRAM and is within frequency~~ **as** allowed by the American Society of Mechanical Engineers (ASME) Code (Ref. 7), and is based on the need to perform the Surveillance under conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

OR

The Surveillance Frequency **[is based on the requirements of 10 CFR 50.55a(f), and]** is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

In addition, testing must be performed once after the valve has been opened by flow or exercised to ensure tight reseating. PIVs disturbed in the performance of this Surveillance should also be tested unless documentation shows that an infinite testing loop cannot practically be avoided. Testing must be performed within 24 hours after the valve has been reseated. Within 24 hours is a reasonable and practical time limit for performing this test after opening or reseating a valve.

BASES

SURVEILLANCE REQUIREMENTS (continued)

determined to not challenge system OPERABILITY. The accuracy of the method used for monitoring the susceptible locations and trending of the results should be sufficient to assure system OPERABILITY during the Surveillance interval.

[The 31 day Frequency takes into consideration the gradual nature of gas accumulation in the ECCS piping and the adequacy of the procedural controls governing system operation.
OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. The Surveillance Frequency may vary by location susceptible to gas accumulation.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.5.2.4

Periodic surveillance testing of ECCS pumps to detect gross degradation caused by impeller structural damage or other hydraulic component problems is required by the ASME Code. This type of testing may be accomplished by measuring the pump developed head at only one point of the pump characteristic curve. This verifies both that the measured performance is within an acceptable tolerance of the original pump baseline performance and that the performance at the test flow is greater than or equal to the performance assumed in the unit safety analysis. ~~SRs are specified in the INSERVICE TESTING PROGRAM of the ASME Code.~~ **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.** The ASME Code provides the activities ~~and Frequencies~~ necessary to satisfy the requirements.

SR 3.5.2.5

Discharge head at design flow is a normal test of charging pump performance required by the ASME Code ~~and the INSERVICE TESTING PROGRAM~~. ~~A quarterly Frequency for such tests is a Code requirement.~~ Such inservice inspections detect component degradation and incipient failures. **The Surveillance Frequency is based on the requirements**

of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

or otherwise secured and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the containment boundary is within design limits. For containment isolation valves inside containment, the Frequency of "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is appropriate, since these containment isolation valves are operated under administrative controls and the probability of their misalignment is low. Containment isolation valves that are open under administrative controls are not required to meet the SR during the time that they are open. This SR does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing, or securing.

The Note allows valves and blind flanges located in high radiation areas to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, and 3 for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in their proper position, is small.

SR 3.6.3.5

Verifying that the isolation time of each automatic power operated containment isolation valve is within limits is required to demonstrate OPERABILITY. The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analysis.

~~REVIEWER'S NOTE~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of [18 months] or the reference to the Surveillance Frequency Control Program should be used.~~

[The Frequency of this SR is ~~in accordance with [the INSERVICE TESTING PROGRAM] [~~92 days.

OR

The Surveillance Frequency **[is based on the requirements of 10 CFR 50.55a(f), and]** is controlled under the Surveillance Frequency Control Program.]]

BASES

SURVEILLANCE REQUIREMENTS (continued)

volume has been evaluated and determined to not challenge system OPERABILITY. The accuracy of the method used for monitoring the susceptible locations and trending of the results should be sufficient to assure system OPERABILITY during the Surveillance interval.

[The 31 day Frequency takes into consideration the gradual nature of gas accumulation in the Containment Spray System piping and the procedural controls governing system operation.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. The Surveillance Frequency may vary by location susceptible to gas accumulation.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.6A.6

Verifying that each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head ensures that spray pump performance has not degraded during the cycle. Flow and differential pressure are normal tests of centrifugal pump performance required by the ASME Code (Ref. 9). Since the containment spray pumps cannot be tested with flow through the spray headers, they are tested on recirculation flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such ~~inservice~~ inspections confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. ~~The Frequency of this SR is in accordance with the INSERVICE TESTING PROGRAM.~~ **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**

SR 3.6.6A.7 and SR 3.6.6A.8

These SRs verify that each automatic containment spray valve actuates to its correct position and that each containment spray pump starts upon receipt of an actual or simulated actuation signal. This Surveillance is not

BASES

SURVEILLANCE REQUIREMENTS (continued)

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. The Surveillance Frequency may vary by location susceptible to gas accumulation.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.6B.6

Verifying that each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head ensures that spray pump performance has not degraded during the cycle. Flow and differential pressure are normal tests of centrifugal pump performance required by the ASME Code (Ref. 7). Since the containment spray pumps cannot be tested with flow through the spray headers, they are tested on recirculation flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such ~~inservice~~ inspections confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. ~~The Frequency of this SR is in accordance with the INSERVICE TESTING PROGRAM.~~ **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**

SR 3.6.6B.7 and SR 3.6.6B.8

These SRs verify each automatic containment spray valve actuates to its correct position and that each containment spray pump starts upon receipt of an actual or simulated actuation signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. [The [18] month Frequency is based on the need to perform these Surveillances under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillances were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillances when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.7.3

This SR provides verification of the N_2H_4 concentration in the spray additive tank and is sufficient to ensure that the spray solution being injected into containment is at the correct pH level. The concentration of N_2H_4 in the spray additive tank must be determined by chemical analysis. [The 184 day Frequency is sufficient to ensure that the concentration level of N_2H_4 in the spray additive tank remains within the established limits. This is based on the low likelihood of an uncontrolled change in concentration (the tank is normally isolated) and the probability that any substantial variance in tank volume will be detected.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

[SR 3.6.7.4

The chemical addition pump must be verified to provide the flow rate assumed in the accident analysis to the Containment Spray System. The Spray Additive System is not operated during normal operations. This prevents periodically subjecting systems, structures, and components within containment to a caustic spray solution. Therefore, this test must be performed on recirculation with the discharge flow path from each spray chemical addition pump aligned back to the spray additive tank. The differential pressure obtained by the pump on recirculation is analogous to the full spray additive flow provided to the Containment Spray System on an actual CSAS. ~~The Frequency of this SR is in accordance with the INSERVICE TESTING PROGRAM and is sufficient to identify component degradation that may affect flow rate.~~ **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**]

BASES

ACTIONS (continued)

C.1

If an inoperable HMS 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. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.9.1

Operating each HMS train for ≥ 15 minutes ensures that the train is OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan and/or motor failure, or excessive vibration can be detected for corrective action. [The 92 day Frequency is consistent with ~~INSERVICE TESTING PROGRAM Surveillance Frequencies,~~ operating experience, the known reliability of the fan motors and controls, and the two train redundancy available.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.9.2

Verifying that each HMS train flow rate on slow speed is ≥ [37,000] cfm ensures that each train is capable of maintaining localized hydrogen concentrations below the flammability limit. [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.

BASES

ACTIONS (continued)

B.1 and B.2

If the vacuum relief line 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 3.6.12.1

This SR **verifies the OPERABILITY of the Vacuum Relief Valves** ~~references the INSERVICE TESTING PROGRAM, which establishes the requirement that inservice testing of the ASME Code Class 1, 2, and 3 pumps and valves shall be performed~~ in accordance with the ASME **Code**~~Boiler and Pressure Vessel Code and applicable Addenda~~ (Ref. 2). ~~Therefore, SR Frequency is governed by the INSERVICE TESTING PROGRAM.~~ **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**

REFERENCES

1. FSAR, Section [6.2].

2. ASME Code for Operation and Maintenance of Nuclear Power Plants.

BASES

APPLICABLE SAFETY ANALYSES (continued)

The limiting accident for peak RCS pressure is the full power feedwater line break (FWLB), inside containment, with the failure of the backflow check valve in the feedwater line from the affected steam generator. Water from the affected steam generator is assumed to be lost through the break with minimal additional heat transfer from the RCS. With heat removal limited to the unaffected steam generator, the reduced heat transfer causes an increase in RCS temperature, and the resulting RCS fluid expansion causes an increase in pressure. The RCS pressure increases to ≤ 2730 psig, with the pressurizer safety valves providing relief capacity. The maximum relieving rate of the MSSVs during the FWLB event is ≤ 2.5 E6 lb/hour, which is less than the rated capacity of two MSSVs.

Using conservative analysis assumptions, a small range of FWLB sizes less than a full double ended guillotine break produce an RCS pressure of 2765 psig for a period of 20 seconds; exceeding 110% (2750 psig) of design pressure. This is considered acceptable as RCS pressure is still well below 120% of design pressure where deformation may occur. The probability of this event is in the range of 4 E-6/year.

The MSSVs satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

This LCO requires all MSSVs to be OPERABLE in compliance with Reference 2, even though this is not a requirement of the DBA analysis. This is because operation with less than the full number of MSSVs requires limitations on allowable THERMAL POWER (to meet Reference 2 requirements), and adjustment to the Reactor Protection System trip setpoints. These limitations are according to those shown in Table 3.7.1-1, Required Action A.1, and Required Action A.2 in the accompanying LCO. An MSSV is considered inoperable if it fails to open upon demand.

The OPERABILITY of the MSSVs is defined as the ability to open within the setpoint tolerances, relieve steam generator overpressure, and reseat when pressure has been reduced. The OPERABILITY of the MSSVs is determined by periodic surveillance testing in accordance with the **ASME Code**~~INSERVICE TESTING PROGRAM~~.

The lift settings, according to Table 3.7.1-2 in the accompanying LCO, correspond to ambient conditions of the valve at nominal operating temperature and pressure.

This LCO provides assurance that the MSSVs will perform their designed safety function to mitigate the consequences of accidents that could result in a challenge to the RCPB.

BASES

ACTIONS (continued)

109.2 = Ratio of MSSV relieving capacity at 110% steam generator design pressure to calculated steam flow rate at 100% RTP + 2% instrument uncertainty expressed as a percentage (see text above).

9.8 = Band between the maximum THERMAL POWER and the variable overpower trip setpoint ceiling (Table 3.7.1-1).

The operator should limit the maximum steady state power level to some value slightly below this setpoint to avoid an inadvertent overpower trip.

The 4 hour Completion Time for Required Action A.1 is a reasonable time period to reduce power level and is based on the low probability of an event occurring during this period that would require activation of the MSSVs. An additional 32 hours is allowed in Required Action A.2 to reduce the setpoints. The Completion Time of 36 hours for Required Action A.2 is based on a reasonable time to correct the MSSV inoperability, the time required to perform the power reduction, operating experience in resetting all channels of a protective function, and on the low probability of the occurrence of a transient that could result in steam generator overpressure during this period.

B.1 and B.2

If the MSSVs cannot be restored to OPERABLE status in the associated Completion Time, or if one or more steam generators have less than two MSSVs OPERABLE, 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 4 within [12] 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 3.7.1.1

This SR verifies the OPERABILITY of the MSSVs by the verification of each MSSV lift setpoints in accordance with the ~~INSERVICE TESTING PROGRAM. The~~ ASME Code (Ref. 4), **which** requires that safety and relief valve tests be performed in accordance with ANSI/ASME OM-1-1987 (Ref. 5). According to Reference 5, the following tests are required for MSSVs:

BASES

SURVEILLANCE REQUIREMENTS (continued)

a. Visual examination,

b. Seat tightness determination,

c. Setpoint pressure determination (lift setting),

d. Compliance with owner's seat tightness criteria, and

e. Verification of the balancing device integrity on balanced valves.

The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program. ~~The ANSI/ASME Standard requires that all valves be tested every 5 years, and a minimum of 20% of the valves be tested every 24 months.~~ The ASME Code specifies the activities ~~and frequencies~~ necessary to satisfy the requirements. Table 3.7.1-2 allows a ± [3]% setpoint tolerance for OPERABILITY; however, the valves are reset to ± 1% during the Surveillance to allow for drift.

This SR is modified by a Note that allows entry into and operation in MODE 3 prior to performing the SR. This is to allow testing of the MSSVs at hot conditions. The MSSVs may be either bench tested or tested in situ at hot conditions using an assist device to simulate lift pressure. If the MSSVs are not tested at hot conditions, the lift setting pressure shall be corrected to ambient conditions of the valve at operating temperature and pressure.

REFERENCES

1. FSAR, Section [5.2].

2. ASME, Boiler and Pressure Vessel Code, Section III, Article NC-7000, Class 2 Components.

3. FSAR, Section [15.2].

4. ASME Code for Operation and Maintenance of Nuclear Power Plants.

5. ANSI/ASME OM-1-1987.

BASES

ACTIONS (continued)

D.1 and D.2

If the MSIVs cannot be restored to OPERABLE status, or closed, 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 4 within [12] hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from MODE 2 conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.2.1

This SR verifies that the closure time of each MSIV is within the limit given in Reference 5 and is within that assumed in the accident and containment analyses. This SR also verifies the valve closure time is in accordance with the **ASME Code**~~INSERVICE TESTING PROGRAM~~. This SR is normally performed upon returning the unit to operation following a refueling outage. The MSIVs should not be tested at power since even a part stroke exercise increases the risk of a valve closure with the unit generating power. As the MSIVs are not tested at power, they are exempt from the ASME Code (Ref. 6), requirements during operation in MODES 1 and 2.

~~The Frequency for this SR is in accordance with the INSERVICE TESTING PROGRAM.~~ **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**

This test is conducted in MODE 3, with the unit at operating temperature and pressure. This SR is modified by a Note that allows entry into and operation in MODE 3 prior to performing the SR. This allows a delay of testing until MODE 3, in order to establish conditions consistent with those under which the acceptance criterion was generated.

SR 3.7.2.2

This SR verifies that each MSIV can close on an actual or simulated actuation signal. This Surveillance is normally performed upon returning the plant to operation following a refueling outage. [The Frequency of MSIV testing is every [18] months. The [18] month Frequency for testing is based on the refueling cycle. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, this Frequency is acceptable from a reliability standpoint.

BASES

ACTIONS (continued)

C.1 and [C.2]

If the MFIVs and their bypass valves cannot be restored to OPERABLE status, closed, or isolated in 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 4 within [12] 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 3.7.3.1

This SR verifies that the closure time of each MFIV [and [MFIV] bypass valve] is within the limit given in Reference 2 and is within that assumed in the accident and containment analyses. This SR also verifies that the valve closure time is in accordance with the **ASME Code**~~INSERVICE TESTING PROGRAM~~. This SR is normally performed upon returning the unit to operation following a refueling outage. The MFIVs should not be tested at power since even a part stroke exercise increases the risk of a valve closure with the unit generating power. As these valves are not tested at power, they are exempt from the ASME Code (Ref. 3) requirements during operation in MODES 1 and 2.

~~The Frequency is in accordance with the INSERVICE TESTING PROGRAM.~~ **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**

SR 3.7.3.2

This SR verifies that each MFIV [and [MFIV] bypass valve] can close on an actual or simulated actuation signal. This Surveillance is normally performed upon returning the plant to operation following a refueling outage.

[The Frequency for this SR is every [18] months. The [18] month Frequency for testing is based on the refueling cycle. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, this Frequency is acceptable from a reliability standpoint.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.5.2

Verifying that each AFW pump's developed head at the flow test point is greater than or equal to the required developed head ensures that AFW pump performance has not degraded during the cycle. Flow and differential head are normal tests of pump performance required by the ASME Code (Ref. 2). Because it is undesirable to introduce cold AFW into the steam generators while they are operating, this testing is performed on recirculation flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such ~~inservice~~ tests confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. Performance **this testing is** ~~of inservice testing, as~~ discussed in the ASME Code (Ref. 2) ~~and the INSERVICE TESTING PROGRAM, satisfies this requirement.~~ **The Surveillance Frequency is based on the requirements of 10 CFR 50.55a(f), and is controlled under the Surveillance Frequency Control Program.**

This SR is modified by a Note indicating that the SR should be deferred until suitable test conditions are established. This deferral is required because there is an insufficient steam pressure to perform the test.

SR 3.7.5.3

This SR ensures that AFW can be delivered to the appropriate steam generator, in the event of any accident or transient that generates an EFAS signal, by demonstrating that each automatic valve in the flow path actuates to its correct position on an actual or simulated actuation signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. [The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. The 18 month Frequency is acceptable, based on the design reliability and operating experience of the equipment.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency

BASES

SURVEILLANCE REQUIREMENTS

SR 3.9.3.1

This Surveillance demonstrates that each of the containment penetrations required to be in its closed position is in that position. The Surveillance on the open purge and exhaust valves will demonstrate that the valves are not blocked from closing. Also, the Surveillance will demonstrate that each valve operator has motive power, which will ensure each valve is capable of being closed by an OPERABLE automatic containment purge and exhaust isolation signal.

[The Surveillance is performed every 7 days during movement of [recently] irradiated fuel assemblies within the containment. The Surveillance interval is selected to be commensurate with the normal duration of time to complete fuel handling operations. A surveillance before the start of refueling operations will provide two or three surveillance verifications during the applicable period for this LCO. As such, this Surveillance ensures that a postulated fuel handling accident [involving handling recently irradiated fuel] that releases fission product radioactivity within the containment will not result in a release of significant fission product radioactivity to the environment in excess of those recommended by Standard Review Plan Section 15.7.4 (Ref. 3).

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.9.3.2

This Surveillance demonstrates that each containment purge and exhaust valve actuates to its isolation position on manual initiation or on an actual or simulated high radiation signal. [The 18 month Frequency maintains consistency with other similar ESFAS instrumentation and valve testing requirements. In LCO 3.3.4 [(Digital) or 3.3.3 (Analog)], "Miscellaneous Actuations," the Containment Purge Isolation Signal System requires a CHANNEL CHECK every 7 days and a CHANNEL FUNCTIONAL TEST every 31 days to ensure the channel OPERABILITY during refueling

BASES

SURVEILLANCE REQUIREMENTS (continued)

operations. Every 18 months a CHANNEL CALIBRATION is performed. The system actuation response time is demonstrated every 18 months, during refueling, on a STAGGERED TEST BASIS. SR 3.6.3.5 demonstrates that the isolation time of each valve is in accordance with the ~~INSERVICE TESTING PROGRAM~~ requirements.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

These surveillances performed during MODE 6 will ensure that the valves are capable of closing after a postulated fuel handling accident [involving handling recently irradiated fuel] to limit a release of fission product radioactivity from the containment.

The SR is modified by a Note stating that this Surveillance is not required to be met for valves in isolated penetrations. The LCO provides the option to close penetrations in lieu of requiring automatic actuation capability.

REFERENCES

1. GPU Nuclear Safety Evaluation SE-0002000-001, Rev. 0, May 20, 1988.

2. FSAR, Section [ ].

3. NUREG-0800, Section 15.7.4, Rev. 1, July 1981.

1.1 Definitions

EMERGENCY CORE COOLING SYSTEM (ECCS) RESPONSE TIME	The ECCS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ECCS initiation setpoint at the channel sensor until the ECCS equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays, where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.
END OF CYCLE RECIRCULATION PUMP TRIP (EOC RPT) SYSTEM RESPONSE TIME	The EOC RPT SYSTEM RESPONSE TIME shall be that time interval from initial signal generation by [the associated turbine stop valve limit switch or from when the turbine control valve hydraulic oil control oil pressure drops below the pressure switch setpoint] to complete suppression of the electric arc between the fully open contacts of the recirculation pump circuit breaker. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured, [except for the breaker arc suppression time, which is not measured but is validated to conform to the manufacturer's design value].
~~INSERVICE TESTING PROGRAM~~	~~The INSERVICE TESTING PROGRAM is the licensee program that fulfills the requirements of 10 CFR 50.55a(f).~~
ISOLATION SYSTEM RESPONSE TIME	The ISOLATION SYSTEM RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its isolation initiation setpoint at the channel sensor until the isolation valves travel to their required positions. Times shall include diesel generator starting and sequence loading delays, where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.7.7	Verify each pump develops a flow rate ≥ [41.2] gpm at a discharge pressure ≥ [1190] psig.	~~[In accordance with the INSERVICE TESTING PROGRAM~~ ~~OR~~ [92 days~~]~~ OR In accordance with the Surveillance Frequency Control Program]
SR 3.1.7.8	Verify flow through one SLC subsystem from pump into reactor pressure vessel.	[[18] months on a STAGGERED TEST BASIS OR In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.3.1	----------NOTE---------- ≤ [2] [required] S/RVs may be changed to a lower setpoint group. ---------- Verify the safety function lift setpoints of the [required] S/RVs are as follows: Number of S/RVs — Setpoint (psig) [4] — [1090 ± 32.7] [4] — [1100 ± 33.0] [3] — [1110 ± 33.3] Following testing, lift settings shall be within ± 1%.	~~[In accordance with the INSERVICE TESTING PROGRAM~~ ~~OR~~ [[18] months~~]~~ OR In accordance with the Surveillance Frequency Control Program]
SR 3.4.3.2	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ---------- Verify each [required] S/RV opens when manually actuated.	[[18] months [on a STAGGERED TEST BASIS for each valve solenoid OR In accordance with the Surveillance Frequency Control Program]]

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.2 Isolate the high pressure portion of the affected system from the low pressure portion by use of a second closed manual, de-activated automatic, or check valve.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.5.1	----------NOTE---------- Not required to be performed in MODE 3. ---------- Verify equivalent leakage of each RCS PIV is ≤ 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm, at an RCS pressure ≥ [ ] and ≤ [ ] psig.	~~[In accordance with the INSERVICE TESTING PROGRAM~~ ~~OR~~ [[18] months~~]~~ OR In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.5	[Verify each LPCI inverter output voltage is ≥ [570] V and ≤ [630] V while supplying the respective bus.	[31 days OR In accordance with the Surveillance Frequency Control Program]]
SR 3.5.1.6	----------NOTE---------- Not required to be performed if performed within the previous 31 days. ---------- Verify each recirculation pump discharge valve [and bypass valve] cycles through one complete cycle of full travel [or is de-energized in the closed position].	Once each startup prior to exceeding 25% RTP
SR 3.5.1.7	Verify the following ECCS pumps develop the specified flow rate [against a system head corresponding to the specified reactor pressure]. System / Flow Rate / No. of Pumps / [System Head Corresponding to a Reactor Pressure of] Core Spray: ≥ [4250] gpm, [1], ≥ [113] psig LPCI: ≥ [17,000] gpm, [2], ≥ [20] psig	[~~In accordance with the INSERVICE TESTING PROGRAM~~ ~~OR~~ [92 days~~]~~ OR In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.5	Verify continuity of the traversing incore probe (TIP) shear isolation valve explosive charge.	[31 days <u>OR</u> In accordance with the Surveillance Frequency Control Program]
SR 3.6.1.3.6	Verify the isolation time of each power operated automatic PCIV, [except for MSIVs], is within limits.	~~[In accordance with the INSERVICE TESTING PROGRAM~~ ~~<u>OR</u>~~ [92 days~~]~~ <u>OR</u> In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.7	Perform leakage rate testing for each primary containment purge valve with resilient seals.	[184 days <u>OR</u> In accordance with the Surveillance Frequency Control Program] <u>AND</u> Once within 92 days after opening the valve
SR 3.6.1.3.8	Verify the isolation time of each MSIV is ≥ [2] seconds and ≤ [8] seconds.	~~[In accordance with the INSERVICE TESTING PROGRAM~~ ~~<u>OR</u>~~ [[18] months~~]~~ <u>OR</u> In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.3.1	Verify each RHR suppression pool cooling subsystem manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position or can be aligned to the correct position.	[31 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.2.3.2	Verify RHR suppression pool cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	[31 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.2.3.3	Verify each RHR pump develops a flow rate > [7700] gpm through the associated heat exchanger while operating in the suppression pool cooling mode.	~~[In accordance with the INSERVICE TESTING PROGRAM~~ ~~OR~~ [92 days~~]~~ OR In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.4.1	Verify each RHR suppression pool spray subsystem manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position or can be aligned to the correct position.	[31 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.2.4.2	Verify RHR suppression pool spray subsystem locations susceptible to gas accumulation are sufficiently filled with water.	[31 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.2.4.3	[Verify each RHR pump develops a flow rate ≥ [400] gpm through the heat exchanger while operating in the suppression pool spray mode.	~~[In accordance with the INSERVICE TESTING PROGRAM~~ ~~OR~~ [92 days~~]~~ OR In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.4.2.2	Verify the isolation time of each power operated, automatic SCIV is within limits.	~~[In accordance with the INSERVICE TESTING PROGRAM~~ ~~OR~~ [92 days~~]~~ OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.4.2.3	Verify each automatic SCIV actuates to the isolation position on an actual or simulated actuation signal.	[[18] months OR In accordance with the Surveillance Frequency Control Program]

5.5 Programs and Manuals

5.5.2 Primary Coolant Sources Outside Containment

This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. The systems include [the Low Pressure Core Spray, High Pressure Coolant Injection, Residual Heat Removal, Reactor Core Isolation Cooling, hydrogen recombiner, process sampling, and Standby Gas Treatment]. The program shall include the following:

a. Preventive maintenance and periodic visual inspection requirements and

b. Integrated leak test requirements for each system at **a Frequency in accordance with the Surveillance Frequency Control Program** ~~least once per [18] months~~.

The provisions of SR 3.0.2 are applicable.

[5.5.3 Post Accident Sampling

----------REVIEWER'S NOTE ----------
This program may be eliminated based on the implementation of NEDO-32991, Revision 0, "Regulatory Relaxation For BWR Post Accident Sampling Stations (PASS)," and the associated NRC Safety Evaluation dated June 12, 2001, and implementation of the following commitments:

1. [Licensee] has developed contingency plans for obtaining and analyzing highly radioactive samples from the reactor coolant system, suppression pool, and containment atmosphere. The contingency plans will be contained in emergency plan implementing procedures and implemented with the implementation of the License amendment. Establishment of contingency plans is considered a regulatory commitment.

2. The capability for classifying fuel damage events at the Alert level threshold has been established for [Plant] at radioactivity levels of 300 µCi/cc dose equivalent iodine. This capability may use a normal sampling system or correlations of radiation readings to coolant concentrations. This capability will be described in emergency plan implementing procedures and implemented with the implementation of the License amendment. The capability for classifying fuel damage events is considered a regulatory commitment.

3. [Licensee] has established the capability to monitor radioactive iodines that have been released to offsite environs. This capability is described in our emergency plan implementing procedures. The capability to monitor radioactive iodines is considered a regulatory commitment.

This program provides controls that ensure the capability to obtain and analyze reactor coolant, radioactive gases, and particulates in plant gaseous effluents and containment atmosphere samples under accident conditions. The program

5.5 Programs and Manuals

5.5.6 Pre-Stressed Concrete Containment Tendon Surveillance Program (continued)

The provisions of SR 3.0.3 are applicable to the Tendon Surveillance Program inspection frequencies.]

5.5.7 Ventilation Filter Testing Program (VFTP)

A program shall be established to implement the following required testing of Engineered Safety Feature (ESF) filter ventilation systems at the **periodic F**~~f~~requencies **in accordance with the Surveillance Frequency Control Program and the event-based frequencies** specified in [Regulatory Guide], and in accordance with [Regulatory Guide 1.52, Revision 2, ASME N510-1989, and AG-1].

a. Demonstrate for each of the ESF systems that an inplace test of the high efficiency particulate air (HEPA) filters shows a penetration and system

bypass < [0.05]% when tested in accordance with [Regulatory Guide 1.52, Revision 2, and ASME N510-1989] at the system flowrate specified below [± 10%].

ESF Ventilation System	Flowrate
[ ]	[ ]

b. Demonstrate for each of the ESF systems that an inplace test of the charcoal adsorber shows a penetration and system bypass < [0.05]% when tested in accordance with [Regulatory Guide 1.52, Revision 2, and ASME N510-1989] at the system flowrate specified below [± 10%].

ESF Ventilation System	Flowrate
[ ]	[ ]

c. Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in [Regulatory Guide 1.52, Revision 2], shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1989 at a temperature of 30°C (86°F) and the relative humidity specified below.

ESF Ventilation System	Penetration	RH	Face Velocity (fps)
[ ]	[See Reviewer's Note]	[See Reviewer's Note]	[See Reviewer's Note]

5.5 Programs and Manuals

5.5.9 Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:

a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:

   1. An API gravity or an absolute specific gravity within limits,

   2. A flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and

   3. A clear and bright appearance with proper color or a water and sediment content within limits,

b. Within 31 days following addition of the new fuel oil to storage tanks, verify that the properties of the new fuel oil, other than those addressed in a., above, are within limits for ASTM 2D fuel oil, and

c. Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested **at a Frequency in accordance with the Surveillance Frequency Control Program.**~~every 31 days.~~

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program test frequencies.

5.5.10 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.

b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:

   1. A change in the TS incorporated in the license or

   2. A change to the updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.

5.5 Programs and Manuals

5.5.13 Battery Monitoring and Maintenance Program (continued)

5. In lieu of RG 1.129, Regulatory Position 7, Subsection 7.6, "Restoration," the following may be used: "Following the test, record the float voltage of each cell of the string."

b. The program shall include the following provisions:

1. Actions to restore battery cells with float voltage < [2.13] V;

2. Actions to determine whether the float voltage of the remaining battery cells is ≥ [2.13] V when the float voltage of a battery cell has been found to be < [2.13] V;

3. Actions to equalize and test battery cells that had been discovered with electrolyte level below the top of the plates;

4. Limits on average electrolyte temperature, battery connection resistance, and battery terminal voltage; and

5. A requirement to obtain specific gravity readings of all cells at each discharge test, consistent with manufacturer recommendations.

5.5.14 Control Room Envelope (CRE) Habitability Program

A Control Room Envelope (CRE) Habitability Program shall be established and implemented to ensure that CRE habitability is maintained such that, with an OPERABLE [Main Control Room Environmental Control (MCREC)] System, CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of [5 rem whole body or its equivalent to any part of the body] [5 rem total effective dose equivalent (TEDE)] for the duration of the accident. The program shall include the following elements:

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

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

c. Requirements for (i) determining the unfiltered air inleakage past the CRE boundary into the CRE **at the periodic Frequencies in accordance with the Surveillance Frequency Control Program and** in accordance with the testing methods and at the **event-driven f**~~F~~requencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power

5.5 Programs and Manuals

5.5.14 Control Room Envelope (CRE) Habitability Program (continued)

Reactors," Revision 0, May 2003, and (ii) assessing CRE habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.

[The following are exceptions to Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0:

1. ;and]

d. Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one subsystem of the [MCREC] System, operating at the flow rate required by the VFTP, at a Frequency **in accordance with the Surveillance Frequency Control Program**~~of [18] months on a STAGGERED TEST BASIS~~. The results shall be trended and used as part of the **periodic** ~~[18] month~~ assessment of the CRE boundary.

e. The quantitative limits on unfiltered air inleakage into the CRE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air inleakage measured by the testing described in paragraph c.

The unfiltered air inleakage limit for radiological challenges is the inleakage flow rate assumed in the licensing basis analyses of DBA consequences. Unfiltered air inleakage limits for hazardous chemicals must ensure that exposure of CRE occupants to these hazards will be within the assumptions in the licensing basis.

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

[5.5.15 Setpoint Control Program

----------REVIEWER'S NOTE----------
Adoption of a Setpoint Control Program requires changes to other technical specifications. See TSTF-493, Revision 4, "Clarify Application of Setpoint Methodology for LSSS Functions," Option B, for guidance (Agencywide Documents Access and Management System (ADAMS) Accession Number ML101160026).

This program shall establish the requirements for ensuring that setpoints for automatic protective devices are initially within and remain within the assumptions of the applicable safety analyses, provides a means for processing

5.5 Programs and Manuals

5.5.15 Setpoint Control Program (continued)

1 The as-found value of the instrument channel trip setting shall be compared with the previous as-left value or the specified [LTSP or NTSP].

2. If the as-found value of the instrument channel trip setting differs from the previous as-left value or the specified [LTSP or NTSP] by more than the pre-defined test acceptance criteria band (i.e., the specified AFT), then the instrument channel shall be evaluated before declaring the SR met and returning the instrument channel to service. This condition shall be entered in the plant corrective action program.

3. If the as-found value of the instrument channel trip setting is less conservative than the specified AV, then the SR is not met and the instrument channel shall be immediately declared inoperable.

4. The instrument channel setpoint shall be reset to a value that is within the as-left tolerance around the [LTSP or NTSP] at the completion of the surveillance test; otherwise, the channel is inoperable (setpoints may be more conservative than the [LTSP or NTSP] provided that the as-found and as-left tolerances apply to the actual setpoint used to confirm channel performance).

e. The program shall be specified in [insert the facility FSAR reference or the name of any document incorporated into the facility FSAR by reference].]

[5.5.16 Surveillance Frequency Control Program

This program provides controls for Surveillance Frequencies. The program shall ensure that Surveillance Requirements specified in the Technical Specifications are performed at intervals sufficient to assure the associated Limiting Conditions for Operation are met.

a. The Surveillance Frequency Control Program shall contain a list of Frequencies of those Surveillance Requirements for which the Frequency is controlled by the program.

b. Changes to the Frequencies listed in the Surveillance Frequency Control Program shall be made**:**

1. In accordance with the requirements of 10 CFR 50.55a for Frequencies required by 10 CFR 50.55a(f);

2. In accordance with the requirements of 10 CFR 50.69(d)(2) for the Frequencies of testing permitted under 10 CFR 50.69(b)(1)(v) in lieu of testing required by 10 CFR 50.55a(f);

3. Otherwise, in accordance with NEI 04-10, "Risk-Informed Method for Control of Surveillance Frequencies," Revision 1.

c. The provisions of Surveillance Requirements 3.0.2 and 3.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program.]

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.1.7.7

Demonstrating that each SLC System pump develops a flow rate ≥ 41.2 gpm at a discharge pressure ≥ 1190 psig ensures that pump performance has not degraded during the fuel cycle. This minimum pump flow rate requirement ensures that, when combined with the sodium pentaborate solution concentration requirements, the rate of negative reactivity insertion from the SLC System will adequately compensate for the positive reactivity effects encountered during power reduction, cooldown of the moderator, and xenon decay. This test confirms one point on the pump design curve and is indicative of overall performance. Such inservice inspections confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance.

~~----------REVIEWER'S NOTE----------~~
~~If the testing is within the scope of the licensee's inservice testing program, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of 92 days or the reference to the Surveillance Frequency Control Program should be used.~~
~~----------~~

[The Frequency of this Surveillance is ~~[in accordance with the INSERVICE TESTING PROGRAM] [~~92 days.

OR

The Surveillance Frequency **[is based on the requirements of 10 CFR 50.55a(f), and]** is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]]

SR 3.1.7.8 and SR 3.1.7.9

These Surveillances ensure that there is a functioning flow path from the boron solution storage tank to the RPV, including the firing of an explosive valve. The replacement charge for the explosive valve shall be

BASES

ACTIONS (continued)

not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

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

C.1 and C.2

If [three] or more [required] S/RVs are inoperable, a transient may result in the violation of the ASME Code limit on reactor pressure. 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 MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.4.3.1

This Surveillance requires that the [required] S/RVs will open at the pressures assumed in the safety analysis of Reference 1. The demonstration of the S/RV safe lift settings must be performed during shutdown, since this is a bench test, [to be done in accordance with the **requirements of 10 CFR 50.55a(f)**~~INSERVICE TESTING PROGRAM~~]. The lift setting pressure shall correspond to ambient conditions of the valves at nominal operating temperatures and pressures. The S/RV setpoint is ± [3]% for OPERABILITY; however, the valves are reset to ± 1% during the Surveillance to allow for drift. [A Note is provided to allow up to [two] of the required [11] S/RVs to be physically replaced with S/RVs with lower setpoints. This provides operational flexibility which maintains the assumptions in the over-pressure analysis.]

~~REVIEWER'S NOTE~~

~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of 18 months or the reference to the Surveillance Frequency Control Program should be used.~~

[The 18 month Frequency was selected because this Surveillance must be performed during shutdown conditions and is based on the time between refuelings.

BASES

SURVEILLANCE REQUIREMENTS (continued)

OR

The Surveillance Frequency is **[based on the requirements of 10 CFR 50.55a(f), and is]** controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.4.3.2

A manual actuation of each [required] S/RV is performed to verify that, mechanically, the valve is functioning properly and no blockage exists in the valve discharge line. This can be demonstrated by the response of the turbine control valves or bypass valves, by a change in the measured steam flow, or by any other method suitable to verify steam flow. Adequate reactor steam dome pressure must be available to perform this test to avoid damaging the valve. Also, adequate steam flow must be passing through the main turbine or turbine bypass valves to continue to control reactor pressure when the S/RVs divert steam flow upon opening. Sufficient time is therefore allowed after the required pressure and flow are achieved to perform this test. Adequate pressure at which this test is to be performed is [920] psig (the pressure recommended by the valve manufacturer). Adequate steam flow is represented by [at least 1.25 turbine bypass valves open, or total steam flow $\geq 10^6$ lb/hr]. Plant startup is allowed prior to performing this test because valve OPERABILITY and the setpoints for overpressure protection are verified, per ASME Code requirements, prior to valve installation. Therefore, this SR is modified by a Note that states the Surveillance is not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. The 12 hours allowed for manual actuation after the required pressure is reached is sufficient to achieve stable conditions for testing and provides a reasonable time to complete the SR. If a valve fails to actuate due only to the failure of the solenoid but is capable of opening on overpressure, the safety function of the S/RV is considered OPERABLE.

[The [18] month on a STAGGERED TEST BASIS Frequency ensures that each solenoid for each S/RV is alternately tested. The 18 month Frequency was developed based on the S/RV tests required by the ASME Boiler and Pressure Vessel Code (Ref. 4). Operating experience has shown that these components usually pass the Surveillance when

BASES

ACTIONS (continued)

B.1 and B.2

If leakage cannot be reduced or the system isolated, 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 MODE 3 within 12 hours and MODE 4 within 36 hours. This action may reduce the leakage and also reduces the potential for a LOCA outside the containment. The Completion Times are reasonable, based on operating experience, to achieve the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.4.5.1

Performance of leakage testing on each RCS PIV is required to verify that leakage is below the specified limit and to identify each leaking valve. The leakage limit of 0.5 gpm per inch of nominal valve diameter up to 5 gpm maximum applies to each valve. Leakage testing requires a stable pressure condition. For the two PIVs in series, the leakage requirement applies to each valve individually and not to the combined leakage across both valves. If the PIVs are not individually leakage tested, one valve may have failed completely and not be detected if the other valve in series meets the leakage requirement. In this situation, the protection provided by redundant valves would be lost.

~~REVIEWER'S NOTE~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of 18 months or the reference to the Surveillance Frequency Control Program should be used.~~

[The 18 month Frequency **consistent with 10 CFR 50.55a(f) as** ~~required by the INSERVICE TESTING PROGRAM is within~~ **allowed by** the ASME Code ~~Frequency requirement~~ and is based on the need to perform this Surveillance during an outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

OR

The Surveillance Frequency **[is based on the requirements of 10 CFR 50.55a(f),]** ~~is based on~~ operating experience, equipment reliability, and plant risk and is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.5.1.2

Verifying the correct alignment for manual, power operated, and automatic valves in the ECCS flow paths provides assurance that the proper flow paths will exist for ECCS operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position since these were verified to be in the correct position prior to locking, sealing, or securing. A valve that receives an initiation signal is allowed to be in a nonaccident position provided the valve will automatically reposition in the proper stroke time. This SR does not require any testing or valve manipulation; rather, it involves verification that those valves capable of potentially being mispositioned are in the correct position. This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves. For the HPCI System, this SR also includes the steam flow path for the turbine and the flow controller position.

[~~The 31 day Frequency of this SR was derived from the INSERVICE TESTING PROGRAM requirements for performing valve testing at least once every 92 days.~~ The Frequency of 31 days is ~~further~~ justified because the valves are operated under procedural control and because improper valve position would only affect a single subsystem. This Frequency has been shown to be acceptable through operating experience.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

The Surveillance is modified by a Note which exempts system vent flow paths opened under administrative control. The administrative control should be proceduralized and include stationing a dedicated individual at the system vent flow path who is in continuous communication with the operators in the control room. This individual will have a method to rapidly close the system vent flow path if directed.

BASES

SURVEILLANCE REQUIREMENTS (continued)

The specified Frequency is once during reactor startup before THERMAL POWER is > 25% RTP. However, this SR is modified by a Note that states the Surveillance is only required to be performed if the last performance was more than 31 days ago. Therefore, implementation of this Note requires this test to be performed during reactor startup before exceeding 25% RTP. Verification during reactor startup prior to reaching > 25% RTP is an exception to the normal ~~INSERVICE TESTING PROGRAM~~ generic valve cycling Frequency, but is considered acceptable due to the demonstrated reliability of these valves. If the valve is inoperable and in the open position, the associated LPCI subsystem must be declared inoperable.

SR 3.5.1.7, SR 3.5.1.8, and SR 3.5.1.9

The performance requirements of the low pressure ECCS pumps are determined through application of the 10 CFR 50, Appendix K criteria (Ref. 8). This periodic Surveillance is performed (in accordance with the ASME Code requirements for the ECCS pumps) to verify that the ECCS pumps will develop the flow rates required by the respective analyses. The low pressure ECCS pump flow rates ensure that adequate core cooling is provided to satisfy the acceptance criteria of Reference 10. The pump flow rates are verified against a system head equivalent to the RPV pressure expected during a LOCA. The total system pump outlet pressure is adequate to overcome the elevation head pressure between the pump suction and the vessel discharge, the piping friction losses, and RPV pressure present during a LOCA. These values may be established during preoperational testing.

The flow tests for the HPCI System are performed at two different pressure ranges such that system capability to provide rated flow is tested at both the higher and lower operating ranges of the system. Additionally, adequate steam flow must be passing through the main turbine or turbine bypass valves to continue to control reactor pressure when the HPCI System diverts steam flow. Reactor steam pressure must be ≥ [920] psig to perform SR 3.5.1.8 and ≥ [150] psig to perform SR 3.5.1.9. Adequate steam flow is represented by [at least 1.25 turbine bypass valves open, or total steam flow ≥ 10^6 lb/hr]. Therefore, sufficient time is allowed after adequate pressure and flow are achieved to perform these tests. Reactor startup is allowed prior to performing the low pressure Surveillance test because the reactor pressure is low and the time allowed to satisfactorily perform the Surveillance test is short. The reactor pressure is allowed to be increased to normal operating pressure since it is assumed that the low pressure test has been satisfactorily completed and there is no indication or reason to believe that HPCI is inoperable.

BASES

SURVEILLANCE REQUIREMENTS (continued)

Therefore, SR 3.5.1.8 and SR 3.5.1.9 are modified by Notes that state the Surveillances are not required to be performed until 12 hours after the reactor steam pressure and flow are adequate to perform the test.

~~----------REVIEWER'S NOTE----------~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of [92 days] or the reference to the Surveillance Frequency Control Program should be used.~~
~~----------~~

[The Frequency for SR 3.5.1.7 is [92 days] **[which is consistent with the requirements in 10 CFR 50.55a(f).]**~~[in accordance with the INSERVICE TESTING PROGRAM]~~. The Frequency for SR 3.5.1.8 is **is consistent with the requirements in 10 CFR 50.55a(f)**~~in accordance with the Inservice Testing Program requirements~~. The 18 month Frequency for SR 3.5.1.9 is based on the need to perform the Surveillance under the conditions that apply just prior to or during a startup from a plant outage. Operating experience has shown that these components usually pass the SR 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.

OR

The Surveillance Frequency for SR 3.5.1.7 is [based on the requirements of 10 CFR 50.55a(f), and is] controlled under the Surveillance Frequency Control Program. The Surveillance Frequencies for ~~[SR 3.5.1.7,]~~ SR 3.5.1.8, and SR 3.5.1.9 are controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.5.1.10

The ECCS subsystems are required to actuate automatically to perform their design functions. This Surveillance verifies that, with a required system initiation signal (actual or simulated), the automatic initiation logic of HPCI, CS, and LPCI will cause the systems or subsystems to operate

BASES

SURVEILLANCE REQUIREMENTS (continued)

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.5.3.2

Verifying the correct alignment for manual, power operated, and automatic valves in the RCIC flow path provides assurance that the proper flow path will exist for RCIC operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position since these valves were verified to be in the correct position prior to locking, sealing, or securing. A valve that receives an initiation signal is allowed to be in a nonaccident position provided the valve will automatically reposition in the proper stroke time. This SR does not require any testing or valve manipulation; rather, it involves verification that those valves capable of potentially being mispositioned are in the correct position. This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves. For the RCIC System, this SR also includes the steam flow path for the turbine and the flow controller position.

[~~The 31 day Frequency of this SR was derived from the INSERVICE TESTING PROGRAM requirements for performing valve testing at least once every 92 days.~~ The Frequency of 31 days is ~~further~~ justified because the valves are operated under procedural control and because improper valve position would affect only the RCIC System. This Frequency has been shown to be acceptable through operating experience.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

BASES

SURVEILLANCE REQUIREMENTS (continued)

The Surveillance is modified by a Note which exempts system vent flow paths opened under administrative control. The administrative control should be proceduralized and include stationing a dedicated individual at the system vent flow path who is in continuous communication with the operators in the control room. This individual will have a method to rapidly close the system vent flow path if directed.

SR 3.5.3.3 and SR 3.5.3.4

The RCIC pump flow rates ensure that the system can maintain reactor coolant inventory during pressurized conditions with the RPV isolated. The flow tests for the RCIC System are performed at two different pressure ranges such that system capability to provide rated flow is tested both at the higher and lower operating ranges of the system. Additionally, adequate steam flow must be passing through the main turbine or turbine bypass valves to continue to control reactor pressure when the RCIC System diverts steam flow. Reactor steam pressure must be ≥ [920] psig to perform SR 3.5.3.3 and ≥ [150] psig to perform SR 3.5.3.4. Adequate steam flow is represented by [at least 1.25 turbine bypass valves open, or total steam flow ≥ 10^6 lb/hr]. Therefore, sufficient time is allowed after adequate pressure and flow are achieved to perform these SRs. Reactor startup is allowed prior to performing the low pressure Surveillance because the reactor pressure is low and the time allowed to satisfactorily perform the Surveillance is short. The reactor pressure is allowed to be increased to normal operating pressure since it is assumed that the low pressure Surveillance has been satisfactorily completed and there is no indication or reason to believe that RCIC is inoperable. Therefore, these SRs are modified by Notes that state the Surveillances are not required to be performed until 12 hours after the reactor steam pressure and flow are adequate to perform the test.

[A 92 day Frequency for SR 3.5.3.3 is consistent with the **requirements in 10 CFR 50.55a(f)**~~INSERVICE TESTING PROGRAM requirements~~. The 18 month Frequency for SR 3.5.3.4 is based on the need to perform the Surveillance under conditions that apply just prior to or during a startup from a plant outage. Operating experience has shown that these components usually pass the SR 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.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.1.3.6

Verifying the isolation time of each power operated, automatic PCIV is within limits is required to demonstrate OPERABILITY. MSIVs may be excluded from this SR since MSIV full closure isolation time is demonstrated by SR 3.6.1.3.7. The isolation time test ensures that the valve will isolate in a time period less than or equal to that assumed in the safety analyses. ~~The isolation time is in accordance with the INSERVICE TESTING PROGRAM.~~

~~----------REVIEWER'S NOTE----------~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of 92 days or the reference to the Surveillance Frequency Control Program should be used.~~
~~----------~~

[The Frequency of this SR is ~~[in accordance with the requirements of the INSERVICE TESTING PROGRAM]~~ [92 days

OR

The Surveillance Frequency **[is based on the requirements of 10 CFR 50.55a(f), and]** is controlled under the Surveillance Frequency Control Program.]

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------].

BASES

SURVEILLANCE REQUIREMENTS (continued)

[SR 3.6.1.3.7

For primary containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J, Option [A][B] (Ref. 4), is required to ensure OPERABILITY. Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than do other seal types. [Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between primary containment and the environment), a Frequency of 184 days was established.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

Additionally, this SR must be performed once within 92 days after opening the valve. The 92 day Frequency was chosen recognizing that cycling the valve could introduce additional seal degradation (beyond that which occurs to a valve that has not been opened). Thus, decreasing the interval is a prudent measure after a valve has been opened.

SR 3.6.1.3.8

Verifying that the isolation time of each MSIV is within the specified limits is required to demonstrate OPERABILITY. The isolation time test ensures that the MSIV will isolate in a time period that does not exceed the times assumed in the DBA analyses. This ensures that the calculated radiological consequences of these events remain within 10 CFR 100 limits.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~----------REVIEWER'S NOTE----------~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of 18 months or the reference to the Surveillance Frequency Control Program should be used.~~
~~----------~~

[The Frequency of this SR is ~~[in accordance with the requirements of the INSERVICE TESTING PROGRAM]~~ [18 months

OR

The Surveillance Frequency **[is based on the requirements of 10 CFR 50.55a(f), and]** is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]].

SR 3.6.1.3.9

Automatic PCIVs close on a primary containment isolation signal to prevent leakage of radioactive material from primary containment following a DBA. This SR ensures that each automatic PCIV will actuate to its isolation position on a primary containment isolation signal. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.6.3.7 overlaps this SR to provide complete testing of the safety function. [The [18] month Frequency was developed considering it is prudent that this Surveillance be performed only during a unit outage since isolation of penetrations would eliminate cooling water flow and disrupt the normal operation of many critical components. Operating experience has shown that these components usually pass this Surveillance when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

OR

BASES

SURVEILLANCE REQUIREMENTS (continued)

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.1.3.10

----------REVIEWER'S NOTE----------
The Surveillance is only allowed for those plants for which NEDO-32977-A, "Excess Flow Check Valve Testing Relaxation," June 2000, is applicable. In addition, the licensee must develop EFCV performance criteria and basis to ensure that their corrective action program can provide meaningful feedback for appropriate corrective actions. The EFCV performance criteria and basis must be found acceptable by the technical staff. If required, a~~n~~ ~~INSERVICE TESTING PROGRAM~~ relief request pursuant to 10 CFR 50.55a needs to be approved by the Technical Staff in order to implement this Surveillance. Otherwise, each EFCV shall be verified to actuate on an [18] month Frequency. The bracketed portions of these Bases apply to the representative sample as discussed in NEDO-32977-A.

This SR requires a demonstration that each [a representative sample of] reactor instrumentation line excess flow check valves (EFCV) is OPERABLE by verifying that the valve [reduces flow to ≤ 1 gph on a simulated instrument line break]. [The representative sample consists of an approximately equal number of EFCVs, such that each EFCV is tested at least once every 10 years (nominal). In addition, the EFCVs in the sample are representative of the various plant configurations, models, sizes and operating environments. This ensures that any potentially common problem with a specific type or application of EFCV is detected at the earliest possible time.]

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.7.2

Each vacuum breaker must be cycled to ensure that it opens properly to perform its design function and returns to its fully closed position. This ensures that the safety analysis assumptions are valid. [The [92] day Frequency of this SR **is consistent with the requirements of the ASME Code.** ~~was developed based upon INSERVICE TESTING PROGRAM requirements to perform valve testing at least once every [92] days.~~

OR

The Surveillance Frequency is **[based on the requirements of 10 CFR 50.55a(f), and is]** controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.1.7.3

Demonstration of vacuum breaker opening setpoint is necessary to ensure that the safety analysis assumption regarding vacuum breaker full open differential pressure of ≤ [0.5] psid is valid. [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. For this unit, the [18] month Frequency has been shown to be acceptable, based on operating experience, and is further justified because of other surveillances performed at shorter Frequencies that convey the proper functioning status of each vacuum breaker.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.

BASES

SURVEILLANCE REQUIREMENTS (continued)

Surveillance to not be considered as failing this SR. These periods of opening vacuum breakers are controlled by plant procedures and do not represent inoperable vacuum breakers.

SR 3.6.1.8.2

Each required vacuum breaker must be cycled to ensure that it opens adequately to perform its design function and returns to the fully closed position. This ensures that the safety analysis assumptions are valid. [The 31 day Frequency of this SR was ~~developed, based on INSERVICE TESTING PROGRAM requirements to perform valve testing at least once every 92 days. A 31 day Frequency was~~ chosen to provide additional assurance that the vacuum breakers are OPERABLE, since they are located in a harsh environment (the suppression chamber airspace).

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

In addition, this functional test is required within 12 hours after either a discharge of steam to the suppression chamber from the safety/relief valves or after an operation that causes any of the vacuum breakers to open.

SR 3.6.1.8.3

Verification of the vacuum breaker opening setpoint is necessary to ensure that the safety analysis assumption regarding vacuum breaker full open differential pressure of [0.5] psid is valid. [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. For this facility, the [18] month Frequency has been shown to be acceptable, based on operating experience, and is further justified because of other surveillances performed at shorter Frequencies that convey the proper functioning status of each vacuum breaker.

BASES

SURVEILLANCE REQUIREMENTS (continued)

susceptible locations where the maximum potential accumulated gas void volume has been evaluated and determined to not challenge system OPERABILITY. The accuracy of the method used for monitoring the susceptible locations and trending of the results should be sufficient to assure system OPERABILITY during the Surveillance interval.

[The 31 day Frequency takes into consideration the gradual nature of gas accumulation in the RHR Suppression Pool Cooling System piping and the procedural controls governing system operation.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. The Surveillance Frequency may vary by location susceptible to gas accumulation.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.2.3.3

Verifying that each RHR pump develops a flow rate ≥ [7700] gpm while operating in the suppression pool cooling mode with flow through the associated heat exchanger ensures that pump performance has not degraded during the cycle. Flow is a normal test of centrifugal pump performance required by ASME Code (Ref. 3). This test confirms one point on the pump design curve, and the results are indicative of overall performance. Such ~~inservice~~ inspections confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance.

~~----------REVIEWER'S NOTE----------~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of 92 days or the reference to the Surveillance Frequency Control Program should be used.~~
~~----------~~

BASES

SURVEILLANCE REQUIREMENTS (continued)

[The Frequency of this SR ~~is [in accordance with the INSERVICE TESTING PROGRAM]~~ [92 days]

OR

The Surveillance Frequency is **[based on the requirements of 10 CFR 50.55a(f), and is]** controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------].

REFERENCES

1. FSAR, Section [6.2].
2. NEDC-32988-A, Revision 2, Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants, December 2002.
3. ASME Code for Operation and Maintenance of Nuclear Power Plants.

BASES

SURVEILLANCE REQUIREMENTS (continued)

[The 31 day Frequency takes into consideration the gradual nature of gas accumulation in the RHR Suppression Pool Spray System piping and the procedural controls governing system operation.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. The Surveillance Frequency may vary by location susceptible to gas accumulation.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.2.4.3

Verifying each RHR pump develops a flow rate ≥ [400] gpm while operating in the suppression pool spray mode with flow through the heat exchanger ensures that pump performance has not degraded during the cycle. Flow is a normal test of centrifugal pump performance required by the ASME Code (Ref. 3). This test confirms one point on the pump design curve and is indicative of overall performance. Such ~~inservice~~ inspections confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance.

~~----------REVIEWER'S NOTE----------~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of 92 days or the reference to the Surveillance Frequency Control Program should be used.~~
~~----------~~

[The Frequency of this SR is ~~[in accordance with the INSERVICE TESTING PROGRAM, but the Frequency must not exceed~~ 92 days.

OR

The Surveillance Frequency is **[based on the requirements of 10 CFR 50.55a(f), and is]** controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.1.1

Operating each [required] [Drywell Cooling System fan] for ≥ 15 minutes ensures that each subsystem is 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. [The 92 day Frequency is consistent ~~with the INSERVICE TESTING PROGRAM Frequencies,~~ operating experience, the known reliability of the fan motors and controls, and the two redundant fans available.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

[SR 3.6.3.1.2

Verifying that each [required] [Drywell Cooling System fan] flow rate is ≥ [500] scfm ensures that each fan is capable of maintaining localized hydrogen concentrations below the flammability limit. [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 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.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.4.2.2

Verifying that the isolation time of each power operated, automatic SCIV is within limits is required to demonstrate OPERABILITY. The isolation time test ensures that the SCIV will isolate in a time period less than or equal to that assumed in the safety analyses. ~~The isolation time is in accordance with the INSERVICE TESTING PROGRAM.~~

~~----------REVIEWER'S NOTE----------~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of 92 days or the reference to the Surveillance Frequency Control Program should be used.~~
~~----------~~

[The Frequency of this SR is ~~[in accordance with the INSERVICE TESTING PROGRAM]~~ [92 days].

OR

The Surveillance Frequency is **[based on the requirements of 10 CFR 50.55a(f), and is]** controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.4.2.3

Verifying that each automatic SCIV closes on a secondary containment isolation signal is required to prevent leakage of radioactive material from [secondary] containment following a DBA or other accidents. This SR ensures that each automatic SCIV will actuate to the isolation position on a [secondary] containment isolation signal. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.6.2.6 overlaps this SR to provide complete testing of the safety function. [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

1.1 Definitions

EMERGENCY CORE COOLING SYSTEM (ECCS) RESPONSE TIME	The ECCS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ECCS initiation setpoint at the channel sensor until the ECCS equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays, where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.
END OF CYCLE RECIRCULATION PUMP TRIP (EOC-RPT) SYSTEM RESPONSE TIME	The EOC-RPT SYSTEM RESPONSE TIME shall be that time interval from initial signal generation by [the associated turbine stop valve limit switch or from when the turbine control valve hydraulic oil control oil pressure drops below the pressure switch setpoint] to complete suppression of the electric arc between the fully open contacts of the recirculation pump circuit breaker. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured, [except for the breaker arc suppression time, which is not measured but is validated to conform to the manufacturer's design value].
~~INSERVICE TESTING PROGRAM~~	~~The INSERVICE TESTING PROGRAM is the licensee program that fulfills the requirements of 10 CFR 50.55a(f).~~
ISOLATION SYSTEM RESPONSE TIME	The ISOLATION SYSTEM RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its isolation initiation setpoint at the channel sensor until the isolation valves travel to their required positions. Times shall include diesel generator starting and sequence loading delays, where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.7.7	Verify each pump develops a flow rate ≥ [41.2] gpm at a discharge pressure ≥ [1300] psig.	~~[In accordance with the INSERVICE TESTING PROGRAM~~ ~~OR~~ [92 days~~]~~ OR In accordance with the Surveillance Frequency Control Program]
SR 3.1.7.8	Verify flow through one SLC subsystem from pump into reactor pressure vessel.	[[18] months on a STAGGERED TEST BASIS OR In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.4.1	----------NOTE---------- ≤ [2] [required] S/RVs may be changed to a lower setpoint group. ---------- Verify the safety function lift setpoints of the [required] S/RVs are as follows: Number of S/RVs — Setpoint (psig) [8] — [1165 ± 34.9] [6] — [1180 ± 35.4] [6] — [1190 ± 35.7] Following testing, lift settings shall be within ± 1%.	~~[In accordance with the INSERVICE TESTING PROGRAM~~ ~~OR~~ [[18] months~~]~~ OR In accordance with the Surveillance Frequency Control Program]
SR 3.4.4.2	----------NOTE---------- Valve actuation may be excluded. ---------- Verify each [required] relief function S/RV actuates on an actual or simulated automatic initiation signal.	[[18] months OR In accordance with the Surveillance Frequency Control Program]

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.2 Isolate the high pressure portion of the affected system from the low pressure portion by use of a second closed manual, deactivated automatic, or check valve.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.6.1	----------NOTE---------- Not required to be performed in MODE 3. ---------- Verify equivalent leakage of each RCS PIV is ≤ 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm, at an RCS pressure ≥ [1040] psig and ≤ [1060] psig.	~~[In accordance with INSERVICE TESTING PROGRAM~~ ~~OR~~ [[18] months OR In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.2	----------NOTE---------- Not required to be met for system vent flow paths opened under administrative control. ---------- Verify each ECCS injection/spray subsystem manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	[31 days <u>OR</u> In accordance with the Surveillance Frequency Control Program]
SR 3.5.1.3	Verify ADS [air receiver] pressure is ≥ [150] psig.	[31 days <u>OR</u> In accordance with the Surveillance Frequency Control Program]
SR 3.5.1.4	Verify each ECCS pump develops the specified flow rate [against a system head corresponding to the specified reactor pressure]. <u>System</u> / <u>Flow Rate</u> / <u>[System Head Corresponding to a Reactor Pressure of]</u> LPCS / ≥ [7115] gpm / ≥ [290] psig LPCI / ≥ [7450] gpm / ≥ [125] psig HPCS / ≥ [7115] gpm / ≥ [445] psig	~~[In accordance with the INSERVICE TESTING PROGRAM~~ ~~<u>OR</u>~~ [92 days~~]~~ <u>OR</u> In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.5	Verify the isolation time of each power operated, automatic PCIV[, except MSIVs,] is within limits.	~~[In accordance with the INSERVICE TESTING PROGRAM~~ ~~OR~~ [92 days~~]~~ OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.1.3.6	----------NOTE---------- [[Only required to be met in MODES 1, 2, and 3.] ---------- Perform leakage rate testing for each primary containment purge valve with resilient seals.	[184 days OR In accordance with the Surveillance Frequency Control Program] AND Once within 92 days after opening the valve]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.7	Verify the isolation time of each MSIV is ≥ [3] seconds and ≤ [5] seconds.	~~[In accordance with the INSERVICE TESTING PROGRAM~~ ~~OR~~ [[18] months~~]~~ OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.1.3.8	Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal.	[[18] months OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.1.3.9	----------NOTE---------- [[Only required to be met in MODES 1, 2, and 3.] ---------- Verify the combined leakage rate for all secondary containment bypass leakage paths is ≤ [ ] L_a when pressurized to ≥ [ ] psig.	In accordance with the Primary Containment Leakage Rate Testing Program]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.7.3	Verify each RHR pump develops a flow rate of ≥ [5650] gpm on recirculation flow through the associated heat exchanger to the suppression pool.	~~[In accordance with the INSERVICE TESTING PROGRAM~~ ~~OR~~ [92 days~~]~~ OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.1.7.4	Verify each RHR containment spray subsystem automatic valve in the flow path actuates to its correct position on an actual or simulated automatic initiation signal, except for valves that are locked, sealed, or otherwise secured in the actuated position.	[[18] months OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.1.7.5	Verify each spray nozzle is unobstructed.	[At first refueling] AND [10 years OR In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.3.1	Verify each RHR suppression pool cooling subsystem manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position or can be aligned to the correct position.	[31 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.2.3.2	Verify RHR suppression pool cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	[31 days OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.2.3.3	Verify each RHR pump develops a flow rate ≥ [7450] gpm through the associated heat exchanger while operating in the suppression pool cooling mode.	~~[In accordance with the INSERVICE TESTING PROGRAM~~ ~~OR~~ [92 days~~]~~ OR In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.4.2.2	Verify the isolation time of each power operated, automatic SCIV is within limits.	~~[In accordance with the INSERVICE TESTING PROGRAM~~ ~~OR~~ [92 days~~]~~ OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.4.2.3	Verify each automatic SCIV actuates to the isolation position on an actual or simulated automatic isolation signal.	[[18] months OR In accordance with the Surveillance Frequency Control Program]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.5.3.4	Verify the isolation time of each power operated, automatic drywell isolation valve is within limits.	~~[In accordance with the INSERVICE TESTING PROGRAM~~ ~~OR~~ [92 days~~]~~ OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.5.3.5	Verify each automatic drywell isolation valve actuates to the isolation position on an actual or simulated isolation signal.	[[18] months OR In accordance with the Surveillance Frequency Control Program]
SR 3.6.5.3.6	[Verify each [ ] inch drywell purge isolation valve is blocked to restrict the valve from opening > [50]%.	[[18] months OR In accordance with the Surveillance Frequency Control Program]]

5.5 Programs and Manuals

5.5.2 Primary Coolant Sources Outside Containment

This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. The systems include [the Low Pressure Core Spray, High Pressure Core Spray, Residual Heat Removal, Reactor Core Isolation Cooling, hydrogen recombiner, process sampling, and Standby Gas Treatment]. The program shall include the following:

a. Preventive maintenance and periodic visual inspection requirements and

b. Integrated leak test requirements for each system at **a Frequency in accordance with the Surveillance Frequency Control Program** ~~least once per [18] months~~.

The provisions of SR 3.0.2 are applicable.

[5.5.3 Post Accident Sampling

----------REVIEWER'S NOTE----------
This program may be eliminated based on the implementation of NEDO-32991, Revision 0, "Regulatory Relaxation For BWR Post Accident Sampling Stations (PASS)," and the associated NRC Safety Evaluation dated June 12, 2001, and implementation of the following commitments:

1. [Licensee] has developed contingency plans for obtaining and analyzing highly radioactive samples from the reactor coolant system, suppression pool, and containment atmosphere. The contingency plans will be contained in emergency plan implementing procedures and implemented with the implementation of the License amendment. Establishment of contingency plans is considered a regulatory commitment.

2. The capability for classifying fuel damage events at the Alert level threshold has been established for [plant] at radioactivity levels of 300 µCi/cc dose equivalent iodine. This capability may use a normal sampling system or correlations of radiation readings to coolant concentrations. This capability will be described in emergency plan implementing procedures and implemented with the implementation of the License amendment. The capability for classifying fuel damage events is considered a regulatory commitment.

3. [Licensee] has established the capability to monitor radioactive iodines that have been released to offsite environs. This capability is described in our emergency plan implementing procedures. The capability to monitor radioactive iodines is considered a regulatory commitment.

This program provides controls that ensure the capability to obtain and analyze reactor coolant, radioactive gases, and particulates in plant gaseous effluents

5.5 Programs and Manuals

5.5.7 Ventilation Filter Testing Program (VFTP)

A program shall be established to implement the following required testing of Engineered Safety Feature (ESF) filter ventilation systems at the **periodic F**~~f~~requencies **in accordance with the Surveillance Frequency Control Program and the event-based frequencies** specified in [Regulatory Guide], and in accordance with [Regulatory Guide 1.52, Revision 2; ASME N510-1989; and AG-1].

a. Demonstrate for each of the ESF systems that an inplace test of the high efficiency particulate air (HEPA) filters shows a penetration and system bypass < [0.05]% when tested in accordance with [Regulatory Guide 1.52, Revision 2, and ASME N510-1989] at the system flowrate specified below [± 10%]:

ESF Ventilation System	Flowrate
[ ]	[ ]

b. Demonstrate for each of the ESF systems that an inplace test of the charcoal adsorber shows a penetration and system bypass < [0.05]% when tested in accordance with [Regulatory Guide 1.52, Revision 2, and ASME N510-1989] at the system flowrate specified below [± 10%]:

ESF Ventilation System	Flowrate
[ ]	[ ]

c. Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in [Regulatory Guide 1.52, Revision 2], shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1989 at a temperature of 30°C (86°F) and the relative humidity specified below:

ESF Ventilation System	Penetration	RH	Face Velocity (fps)
[ ]	[See Reviewer's Note]	[See Reviewer's Note]	[See Reviewer's Note]

----------REVIEWER'S NOTE----------
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 ability of the charcoal filters to perform in a manner consistent with the licensing basis for the facility is indeterminate.

5.5 Programs and Manuals

5.5.9 Diesel Fuel Oil Testing Program (continued)

1. An API gravity or an absolute specific gravity within limits,

2. A flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and

3. A clear and bright appearance with proper color or a water and sediment content within limits,

b. Within 31 days following addition of the new fuel oil to storage tanks, verify that the properties of the new fuel oil, other than those addressed in a., above, are within limits for ASTM 2D fuel oil, and

c. Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested **at a Frequency in accordance with the Surveillance Frequency Control Program.** ~~every 31 days.~~

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program testing frequencies.

5.5.10 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.

b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:

1. A change in the TS incorporated in the license or

2. A change to the updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.

d. Proposed changes that meet the criteria of 5.5.10b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

5.5 Programs and Manuals

5.5.13 Battery Monitoring and Maintenance Program (continued)

1. Actions to restore battery cells with float voltage < [2.13] V;

2. Actions to determine whether the float voltage of the remaining battery cells is ≥ [2.13] V when the float voltage of a battery cell has been found to be < [2.13] V;

3. Actions to equalize and test battery cells that had been discovered with electrolyte level below the top of the plates;

4. Limits on average electrolyte temperature, battery connection resistance, and battery terminal voltage; and

5. A requirement to obtain specific gravity readings of all cells at each discharge test, consistent with manufacturer recommendations.

5.5.14 Control Room Envelope (CRE) Habitability Program

A Control Room Envelope (CRE) Habitability Program shall be established and implemented to ensure that CRE habitability is maintained such that, with an OPERABLE [Main Control Room Environmental Control (MCREC)] System, CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of [5 rem whole body or its equivalent to any part of the body] [5 rem total effective dose equivalent (TEDE)] for the duration of the accident. The program shall include the following elements:

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

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

c. Requirements for (i) determining the unfiltered air inleakage past the CRE boundary into the CRE **at the periodic Frequencies in accordance with the Surveillance Frequency Control Program and** in accordance with the testing methods and at the **event-driven f**~~F~~requencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003, and (ii) assessing CRE habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.

[The following are exceptions to Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0:

5.5 Programs and Manuals

5.5.14 Control Room Envelope (CRE) Habitability Program (continued)

1. ;and]

d. Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one subsystem of the [MCREC] System, operating at the flow rate required by the VFTP, at **at a Frequency in accordance with the Surveillance Frequency Control Program**~~a Frequency of [18] months on a STAGGERED TEST BASIS~~. The results shall be trended and used as part of the **periodic** ~~[18] month~~ assessment of the CRE boundary.

e. The quantitative limits on unfiltered air inleakage into the CRE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air inleakage measured by the testing described in paragraph c. The unfiltered air inleakage limit for radiological challenges is the inleakage flow rate assumed in the licensing basis analyses of DBA consequences. Unfiltered air inleakage limits for hazardous chemicals must ensure that exposure of CRE occupants to these hazards will be within the assumptions in the licensing basis.

f. The provisions of SR 3.0.2 are applicable to the Frequencies for assessing CRE habitability, determining CRE unfiltered inleakage, and measuring

CRE pressure and assessing the CRE boundary as required by paragraphs c and d, respectively.

[5.5.15 Setpoint Control Program

----------REVIEWER'S NOTE----------
Adoption of a Setpoint Control Program requires changes to other technical specifications. See TSTF-493, Revision 4, "Clarify Application of Setpoint Methodology for LSSS Functions," Option B, for guidance (Agencywide Documents Access and Management System (ADAMS) Accession Number ML101160026).

This program shall establish the requirements for ensuring that setpoints for automatic protective devices are initially within and remain within the assumptions of the applicable safety analyses, provides a means for processing changes to instrumentation setpoints, and identifies setpoint methodologies to ensure instrumentation will function as required. The program shall ensure that testing of automatic protective devices related to variables having significant safety functions as delineated by 10 CFR 50.36(c)(1)(ii)(A) verifies that instrumentation will function as required.

a. The program shall list the Functions in the following specifications to which it applies:

5.5 Programs and Manuals

5.5.15 Setpoint Control Program (continued)

AFT), then the instrument channel shall be evaluated before declaring the SR met and returning the instrument channel to service. This condition shall be entered in the plant corrective action program.

3. If the as-found value of the instrument channel trip setting is less conservative than the specified AV, then the SR is not met and the instrument channel shall be immediately declared inoperable.

4. The instrument channel setpoint shall be reset to a value that is within the as-left tolerance around the [LTSP or NTSP] at the completion of the surveillance test; otherwise, the channel is inoperable (setpoints may be more conservative than the [LTSP or NTSP] provided that the as-found and as-left tolerances apply to the actual setpoint used to confirm channel performance).

e. The program shall be specified in [insert the facility FSAR reference or the name of any document incorporated into the facility FSAR by reference].]

[5.5.16 Surveillance Frequency Control Program

This program provides controls for Surveillance Frequencies. The program shall ensure that Surveillance Requirements specified in the Technical Specifications are performed at intervals sufficient to assure the associated Limiting Conditions for Operation are met.

a. The Surveillance Frequency Control Program shall contain a list of Frequencies of those Surveillance Requirements for which the Frequency is controlled by the program.

b. Changes to the Frequencies listed in the Surveillance Frequency Control Program shall be made**:**

1. In accordance with the requirements of 10 CFR 50.55a for Frequencies required by 10 CFR 50.55a(f);

2. In accordance with the requirements of 10 CFR 50.69(d)(2) for the Frequencies of testing permitted under 10 CFR 50.69(b)(1)(v) in lieu of testing required by 10 CFR 50.55a(f);

3. Otherwise, in accordance with NEI 04-10, "Risk-Informed Method for Control of Surveillance Frequencies," Revision 1.

c. The provisions of Surveillance Requirements 3.0.2 and 3.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program.]

BASES

SURVEILLANCE REQUIREMENTS (continued)

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.1.7.5

This Surveillance requires an examination of the sodium pentaborate solution by using chemical analysis to ensure the proper concentration of boron exists in the storage tank. SR 3.1.7.5 must be performed anytime boron or water is added to the storage tank solution to establish that the boron solution concentration is within the specified limits. This Surveillance must be performed anytime the temperature is restored to within the limits of Figure 3.1.7-1, to ensure no significant boron precipitation occurred. [The 31 day Frequency of this Surveillance is appropriate because of the relatively slow variation of boron concentration between surveillances.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.1.7.7

Demonstrating each SLC System pump develops a flow rate ≥ 41.2 gpm at a discharge pressure ≥ 1300 psig ensures that pump performance has not degraded during the fuel cycle. This minimum pump flow rate requirement ensures that, when combined with the sodium pentaborate solution concentration requirements, the rate of negative reactivity insertion from the SLC System will adequately compensate for the positive reactivity effects encountered during power reduction, cooldown of the moderator, and xenon decay. This test confirms one point on the pump design curve, and is indicative of overall performance. Such

BASES

SURVEILLANCE REQUIREMENTS (continued)

inservice inspections confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance.

~~----------REVIEWER'S NOTE----------~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of 92 days or the reference to the Surveillance Frequency Control Program should be used.~~
~~----------~~

The Frequency of this Surveillance is ~~[in accordance with the INSERVICE TESTING PROGRAM] [~~92 days.

OR

The Surveillance Frequency **[is based on the requirements of 10 CFR 50.55a(f), and]** is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]]

SR 3.1.7.8 and SR 3.1.7.9

These Surveillances ensure that there is a functioning flow path from the boron solution storage tank to the RPV, including the firing of an explosive valve. The replacement charge for the explosive valve shall be from the same manufactured batch as the one fired or from another batch that has been certified by having one of that batch successfully fired. The Surveillance may be performed in separate steps to prevent injecting boron into the RPV. An acceptable method for verifying flow from the pump to the RPV is to pump demineralized water from a test tank through one SLC subsystem and into the RPV. [The pump and explosive valve tested should be alternated such that both complete flow paths are tested every 36 months, at alternating 18 month intervals. 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

BASES

ACTIONS (continued)

achieve this status, the plant must be brought to at least MODE 3 within 12 hours.

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

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

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

C.1 and C.2

If [two] or more [required] S/RVs are inoperable, a transient may result in the violation of the ASME Code limit on reactor pressure. 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 MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.4.4.1

This Surveillance demonstrates that the [required] S/RVs will open at the pressures assumed in the safety analysis of Reference 2. The demonstration of the S/RV safety function lift settings must be performed during shutdown, since this is a bench test[, and in accordance with the **requirements of 10 CFR 50.55a(f)**~~INSERVICE TESTING PROGRAM~~]. The lift setting pressure shall

BASES

SURVEILLANCE REQUIREMENTS (continued)

correspond to ambient conditions of the valves at nominal operating temperatures and pressures. The S/RV setpoint is ± [3]% for OPERABILITY; however, the valves are reset to ± 1% during the Surveillance to allow for drift. [A Note is provided to allow up to [two] of the required [11] S/RVs to be physically replaced with S/RVs with lower setpoints. This provides operational flexibility which maintains the assumptions in the over-pressure analysis.]

~~----------REVIEWER'S NOTE----------~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of 18 months or the reference to the Surveillance Frequency Control Program should be used.~~
~~----------~~

[The [18 month] Frequency was selected because this Surveillance must be performed during shutdown conditions and is based on the time between refuelings.

OR

The Surveillance Frequency is **[based on the requirements of 10 CFR 50.55a(f), and is]** controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.4.4.2

The [required] relief function S/RVs are required to actuate automatically upon receipt of specific initiation signals. A system functional test is performed to verify the mechanical portions of the automatic relief function operate as designed when initiated either by an actual or simulated initiation signal. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.6.5.4 overlaps this SR to provide complete testing of the safety function.

BASES

ACTIONS (continued)

reduces the potential for a LOCA outside the containment. The Completion Times are reasonable, based on operating experience, to achieve the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.4.6.1

Performance of leakage testing on each RCS PIV is required to verify that leakage is below the specified limit and to identify each leaking valve. The leakage limit of 0.5 gpm per inch of nominal valve diameter up to 5 gpm maximum applies to each valve. Leakage testing requires a stable pressure condition. For the two PIVs in series, the leakage requirement applies to each valve individually and not to the combined leakage across both valves. If the PIVs are not individually leakage tested, one valve may have failed completely and not be detected if the other valve in series meets the leakage requirement. In this situation, the protection provided by redundant valves would be lost.

~~----------REVIEWER'S NOTE----------~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of 18 months or the reference to the Surveillance Frequency Control Program should be used.~~
~~----------~~

[The 18 month Frequency **consistent with 10 CFR 50.55a(f) as allowed by the** ~~required by the INSERVICE TESTING PROGRAM is within the~~ ASME Code ~~Frequency requirement~~ and is based on the need to perform this Surveillance under the conditions that apply during an outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

OR

The Surveillance Frequency **[is based on the requirements of 10 CFR 50.55a(f), and]** is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

BASES

SURVEILLANCE REQUIREMENTS (continued)

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.5.1.2

Verifying the correct alignment for manual, power operated, and automatic valves in the ECCS flow paths provides assurance that the proper flow paths will exist for ECCS operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position since these valves were verified to be in the correct position prior to locking, sealing, or securing. A valve that receives an initiation signal is allowed to be in a nonaccident position provided the valve will automatically reposition in the proper stroke time. This SR does not require any testing or valve manipulation; rather, it involves verification that those valves potentially capable of being mispositioned are in the correct position. This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves.

[~~The 31 day Frequency of this SR was derived from the INSERVICE TESTING PROGRAM requirements for performing valve testing at least once every 92 days.~~ The Frequency of 31 days is ~~further~~ justified because the valves are operated under procedural control and because improper valve alignment would only affect a single subsystem. This Frequency has been shown to be acceptable through operating experience.

OR

The Surveillance Frequency **[is based on the requirements of 10 CFR 50.55a(f), and]** is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

BASES

SURVEILLANCE REQUIREMENTS (continued)

The Surveillance is modified by a Note which exempts system vent flow paths opened under administrative control. The administrative control should be proceduralized and include stationing a dedicated individual at the system vent flow path who is in continuous communication with the operators in the control room. This individual will have a method to rapidly close the system vent flow path if directed.

SR 3.5.1.3

Verification that ADS air receiver pressure is ≥ [150] psig assures adequate air pressure for reliable ADS operation. The accumulator on each ADS valve provides pneumatic pressure for valve actuation. The designed pneumatic supply pressure requirements for the accumulator are such that, following a failure of the pneumatic supply to the accumulator, at least two valve actuations can occur with the drywell at 70% of design pressure (Ref. 15). The ECCS safety analysis assumes only one actuation to achieve the depressurization required for operation of the low pressure ECCS. This minimum required pressure of [150] psig is provided by the ADS Instrument Air Supply System. [The 31 day Frequency takes into consideration administrative control over operation of the Instrument Air Supply System and alarms for low air pressure.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.5.1.4

The performance requirements of the ECCS pumps are determined through application of the 10 CFR 50, Appendix K, criteria (Ref. 8). This periodic Surveillance is performed (in accordance with the ASME Code requirements for the ECCS pumps) to verify that the ECCS pumps will develop the flow rates required by the respective analyses. The ECCS pump flow rates ensure that adequate core cooling is provided to satisfy the acceptance criteria of 10 CFR 50.46 (Ref. 10).

BASES

SURVEILLANCE REQUIREMENTS (continued)

The pump flow rates are verified against a system head that is equivalent to the RPV pressure expected during a LOCA. The total system pump outlet pressure is adequate to overcome the elevation head pressure between the pump suction and the vessel discharge, the piping friction losses, and RPV pressure present during LOCAs. These values may be established during pre-operational testing.

~~----------REVIEWER'S NOTE----------~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of 92 days or the reference to the Surveillance Frequency Control Program should be used.~~
~~----------~~

[A 92 day Frequency for this Surveillance is **consistent with the requirements of 10 CFR 50.55a(f)**~~in accordance with the INSERVICE TESTING PROGRAM requirements~~.

OR

The Surveillance Frequency is **[is based on the requirements of 10 CFR 50.55a(f), and]** controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.5.1.5

The ECCS subsystems are required to actuate automatically to perform their design functions. This Surveillance test verifies that, with a required system initiation signal (actual or simulated), the automatic initiation logic of HPCS, LPCS, and LPCI will cause the systems or subsystems to operate as designed, including actuation of the system throughout its emergency operating sequence, automatic pump startup, and actuation of all automatic valves to their required positions. This Surveillance also ensures that the HPCS System will automatically restart on an RPV low water level (Level 2) signal received subsequent to an RPV high water level (Level 8) trip and that the suction is automatically transferred from

BASES

SURVEILLANCE REQUIREMENTS (continued)

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.5.3.2

Verifying the correct alignment for manual, power operated, and automatic valves in the RCIC flow path provides assurance that the proper flow path will exist for RCIC operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position since these were verified to be in the correct position prior to locking, sealing, or securing. A valve that receives an initiation signal is allowed to be in a nonaccident position provided the valve will automatically reposition in the proper stroke time. This SR does not require any testing or valve manipulation; rather, it involves verification that those valves capable of potentially being mispositioned are in the correct position. This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves. For the RCIC System, this SR also includes the steam flow path for the turbine and the flow controller position.

[~~The 31 day Frequency of this SR was derived from the INSERVICE TESTING PROGRAM requirements for performing valve testing at least every 92 days.~~ The Frequency of 31 days is ~~further~~ justified because the valves are operated under procedural control and because improper valve position would affect only the RCIC System. This Frequency has been shown to be acceptable through operating experience.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

BASES

SURVEILLANCE REQUIREMENTS (continued)

The Surveillance is modified by a Note which exempts system vent flow paths opened under administrative control. The administrative control should be proceduralized and include stationing a dedicated individual at the system vent flow path who is in continuous communication with the operators in the control room. This individual will have a method to rapidly close the system vent flow path if directed.

SR 3.5.3.3 and SR 3.5.3.4

The RCIC pump flow rates ensure that the system can maintain reactor coolant inventory during pressurized conditions with the RPV isolated. The flow tests for the RCIC System are performed at two different pressure ranges such that system capability to provide rated flow is tested both at the higher and lower operating ranges of the system. Additionally, adequate steam flow must be passing through the main turbine or turbine bypass valves to continue to control reactor pressure when the RCIC System diverts steam flow. Reactor steam pressure must be ≥ [920] psig to perform SR 3.5.3.3 and ≥ [150] psig to perform SR 3.5.3.4. Adequate steam flow is represented by [at least 1.25 turbine bypass valves open, or total steam flow ≥ 10^6 lb/hr. Therefore, sufficient time is allowed after adequate pressure and flow are achieved to perform these SRs. Reactor startup is allowed prior to performing the low pressure Surveillance because the reactor pressure is low and the time to satisfactorily perform the Surveillance is short. The reactor pressure is allowed to be increased to normal operating pressure since it is assumed that the low pressure test has been satisfactorily completed and there is no indication or reason to believe that RCIC is inoperable. Therefore, these SRs are modified by Notes that state the Surveillances are not required to be performed until 12 hours after the reactor steam pressure and flow are adequate to perform the test.

[A 92 day Frequency for SR 3.5.3.3 is consistent with the **requirements in 10 CFR 50.55a(f)**~~INSERVICE TESTING PROGRAM requirements~~. The 18 month Frequency for SR 3.5.3.4 is based on the need to perform this Surveillance under the conditions that apply just prior to or during startup from a plant outage. Operating experience has shown that these components usually pass the SR 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.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

administrative controls and the probability of their misalignment is low. This SR does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing, or securing.

Two Notes are added to this SR. The first Note allows valves and blind flanges located in high radiation areas to be verified by use of administrative controls. Allowing verification by administrative controls is considered acceptable since access to these areas is typically restricted during MODES 1, 2, and 3. Therefore, the probability of misalignment of these PCIVs, once they have been verified to be in their proper position, is low. A second Note is included to clarify that PCIVs that are open under administrative controls are not required to meet the SR during the time that the PCIVs are open.

SR 3.6.1.3.5

Verifying the isolation time of each power operated, automatic PCIV is within limits is required to demonstrate OPERABILITY. MSIVs may be excluded from this SR since MSIV full closure isolation time is demonstrated by SR 3.6.1.3.6. The isolation time test ensures that the valve will isolate in a time period less than or equal to that assumed in the safety analysis. ~~The isolation time is in accordance with the Inservice Testing Program.~~

~~----------REVIEWER'S NOTE----------~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of 92 days or the reference to the Surveillance Frequency Control Program should be used.~~
~~----------~~

[The Frequency of this SR is ~~[in accordance with the INSERVICE TESTING PROGRAM] [~~92 days.

OR

The Surveillance Frequency **[is based on the requirements of 10 CFR 50.55a(f), and]** is controlled under the Surveillance Frequency Control Program.]

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.3.7

Verifying that the full closure isolation time of each MSIV is within the specified limits is required to demonstrate OPERABILITY. The full closure isolation time test ensures that the MSIV will isolate in a time period that does not exceed the times assumed in the DBA analyses.

~~----------REVIEWER'S NOTE----------~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of 92 days or the reference to the Surveillance Frequency Control Program should be used.~~
~~----------~~

[The Frequency of this SR is ~~[in accordance with the INSERVICE TESTING PROGRAM] [~~18 months.

OR

The Surveillance Frequency **[is based on the requirements of 10 CFR 50.55a(f), and]** is controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]]

SR 3.6.1.3.8

Automatic PCIVs close on a primary containment isolation signal to prevent leakage of radioactive material from primary containment following a DBA. This SR ensures that each automatic PCIV will actuate to its isolation position on a primary containment isolation signal. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.6.1.6 overlaps this SR to provide complete testing of the safety function. [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 this Surveillance when performed at the [18] month Frequency.

BASES

SURVEILLANCE REQUIREMENTS (continued)

susceptible locations where the maximum potential accumulated gas void volume has been evaluated and determined to not challenge system OPERABILITY. The accuracy of the method used for monitoring the susceptible locations and trending of the results should be sufficient to assure system OPERABILITY during the Surveillance interval.

[The 31 day Frequency takes into consideration the gradual nature of gas accumulation in the RHR Containment Spray System piping and the procedural controls governing system operation.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. The Surveillance Frequency may vary by location susceptible to gas accumulation.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.1.7.3

Verifying each RHR pump develops a flow rate ≥ [5650] gpm while operating in the suppression pool cooling mode with flow through the associated heat exchanger ensures that pump performance has not degraded during the cycle. It is tested in the pool cooling mode to demonstrate pump OPERABILITY without spraying down equipment in primary containment. Flow is a normal test of centrifugal pump performance required by the ASME Code (Ref. 3). This test confirms one point on the pump design curve and is indicative of overall performance. Such ~~inservice~~ inspections confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance.

~~----------REVIEWER'S NOTE----------~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of 92 days or the reference to the Surveillance Frequency Control Program should be used.~~
~~----------~~

BASES

SURVEILLANCE REQUIREMENTS (continued)

[The Frequency of this SR is ~~[in accordance with the INSERVICE TESTING PROGRAM] [~~92 days.

OR

The Surveillance Frequency is **[based on the requirements of 10 CFR 50.55a(f), and is]** controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]]

SR 3.6.1.7.4

This SR verifies that each RHR containment spray subsystem automatic valve actuates to its correct position upon receipt of an actual or simulated automatic actuation signal. Actual spray initiation is not required to meet this SR. The SR excludes automatic valves that are locked, sealed, or otherwise secured in the actuated position. The SR does not apply to valves that are locked, sealed, or otherwise secured in the actuated position since the affected valves were verified to be in the actuated position prior to being locked, sealed, or otherwise secured. Placing an automatic valve in a locked, sealed, or otherwise secured position requires an assessment of the OPERABILITY of the system or any supported systems, including whether it is necessary for the valve to be repositioned to the non-actuated position to support the accident analysis. Restoration of an automatic valve to the non-actuated position requires verification that the SR has been met within its required Frequency. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.6.3.6 overlaps this SR to provide complete testing of the safety function. [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.

OR

BASES

SURVEILLANCE REQUIREMENTS (continued)

susceptible locations where the maximum potential accumulated gas void volume has been evaluated and determined to not challenge system OPERABILITY. The accuracy of the method used for monitoring the susceptible locations and trending of the results should be sufficient to assure system OPERABILITY during the Surveillance interval.

[The 31 day Frequency takes into consideration the gradual nature of gas accumulation in the RHR Suppression Pool Cooling System piping and the procedural controls governing system operation.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. The Surveillance Frequency may vary by location susceptible to gas accumulation.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

SR 3.6.2.3.3

Verifying each RHR pump develops a flow rate ≥ [7450] gpm, while operating in the suppression pool cooling mode with flow through the associated heat exchanger ensures that pump performance has not degraded during the cycle. Flow is a normal test of centrifugal pump performance required by ASME (Ref. 3). This test confirms one point on the pump design curve, and the results are indicative of overall performance. Such ~~inservice~~ inspections confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance.

~~----------REVIEWER'S NOTE----------~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of 92 days or the reference to the Surveillance Frequency Control Program should be used.~~
~~----------~~

BASES

SURVEILLANCE REQUIREMENTS (continued)

[The Frequency of this SR is ~~[in accordance with the INSERVICE TESTING PROGRAM] [~~92 days.

OR

The Surveillance Frequency is **[based on the requirements of 10 CFR 50.55a(f), and is]** controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]]

REFERENCES

1. FSAR, Section [6.2].

2. NEDC-32988-A, Revision 2, Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants, December 2002.

3. ASME Code for Operation and Maintenance of Nuclear Power Plants.

BASES

ACTIONS (continued)

the ability to perform the hydrogen control function is maintained, continued operation is permitted with two [drywell purge] subsystems inoperable for up to 7 days. Seven days is a reasonable time to allow two [drywell purge] subsystems to be inoperable because the hydrogen control function is maintained and because of the low probability of the occurrence of an accident that would generate hydrogen in amounts capable of exceeding the flammability limit.

C.1

If any Required Action and the required Completion Time cannot be met, 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 12 hours. The allowed Completion Time of 12 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.3.2.1

Operating each [drywell purge] subsystem for ≥ 15 minutes ensures that each subsystem is OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, compressor failure, or excessive vibration can be detected for corrective action. [The 92 day Frequency is consistent with ~~INSERVICE TESTING PROGRAM Frequencies,~~ operating experience, the known reliability of the compressor and controls, and the two redundant subsystems available.

OR

The Surveillance Frequency is **[based on the requirements of 10 CFR 50.55a(f), and is]** controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
----------]

[SR 3.6.3.2.2

BASES

SURVEILLANCE REQUIREMENTS (continued)

Two Notes have been added to this SR. The first Note applies to valves and blind flanges located in high radiation areas and allows them to be verified by use of administrative controls. Allowing verification by administrative controls is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, and 3 for ALARA reasons. Therefore, the probability of misalignment of these SCIVs, once they have been verified to be in the proper position, is low.

A second Note has been included to clarify that SCIVs that are open under administrative controls are not required to meet the SR during the time the SCIVs are open.

SR 3.6.4.2.2

Verifying the isolation time of each power operated, automatic SCIV is within limits is required to demonstrate OPERABILITY. The isolation time test ensures that the SCIV will isolate in a time period less than or equal to that assumed in the safety analyses. ~~The isolation time is in accordance with the Inservice Testing Program.~~

~~----------REVIEWER'S NOTE----------~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of 92 days or the reference to the Surveillance Frequency Control Program should be used.~~
~~----------~~

[The Frequency of this SR ~~is [in accordance with the INSERVICE TESTING PROGRAM]~~ [92 days.

OR

The Surveillance Frequency is **[based on the requirements of 10 CFR 50.55a(f), and is]** controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
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BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.5.3.4

Verifying that the isolation time of each power operated, automatic drywell isolation valve is within limits is required to demonstrate OPERABILITY. The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analysis. ~~The isolation time is in accordance with the INSERVICE TESTING PROGRAM.~~

~~----------REVIEWER'S NOTE----------~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of 92 days or the reference to the Surveillance Frequency Control Program should be used.~~
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[The Frequency of this SR ~~is [in accordance with the INSERVICE TESTING PROGRAM] [~~92 days.

OR

The Surveillance Frequency is **[based on the requirements of 10 CFR 50.55a(f), and is]** controlled under the Surveillance Frequency Control Program.

----------REVIEWER'S NOTE----------
Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.
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SR 3.6.5.3.5

Verifying that each automatic drywell isolation valve closes on a drywell isolation signal is required to prevent bypass leakage from the drywell following a DBA. This SR ensures each automatic drywell isolation valve will actuate to its isolation position on a drywell isolation signal. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.6.1.6 overlaps this SR to provide complete testing of the safety function. [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, since isolation of penetrations would eliminate cooling water flow and disrupt the normal operation of many critical components. Operating