



Entergy Operations, Inc
1340 Echelon Parkway
Jackson, MS 39213
Tel 601-368-5138

Ron Gaston
Director, Nuclear Licensing

10 CFR 50.90

CNRO2021-00019

September 23, 2021

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

Subject: Application to Revise Technical Specifications to Adopt TSTF-541, "Add Exceptions to Surveillance Requirements for Valves and Dampers Locked in the Actuated Position"

Arkansas Nuclear One, Unit 1 and 2 NRC Docket No. 50-313 and 50-368 Renewed Facility Operating License No. DPR-51 and NPF-6	River Bend Station, Unit 1 NRC Docket No. 50-458 Renewed Facility Operating License No. NPF-47
--	---

Grand Gulf Nuclear Station, Unit 1 NRC Docket No. 50-416 Renewed Facility Operating License No. NPF-29	Waterford Steam Electric Station, Unit 3 NRC Docket No. 50-382 Renewed Facility Operating License No. NPF-38
---	---

Reference: U. S. Nuclear Regulatory Commission (NRC) to TSTF, "Final Safety Evaluations of Technical Specifications Task Force Traveler TSTF-541, Revision 2, 'Add Exceptions to Surveillance Requirements for Valves and Dampers Locked in the Actuated Position,' Using the Consolidated Line Item Improvement Process," (ADAMS Accession No. ML19323E957), dated December 10, 2019

Pursuant to 10 CFR 50.90, Entergy Operations, Inc. (Entergy) is submitting a request for an amendment to the Technical Specifications (TS) for Arkansas Nuclear One, Unit 1 (ANO-1), Arkansas Nuclear One, Unit 2 (ANO-2), Grand Gulf Nuclear Station Unit 1 (GGNS), River Bend Station, Unit 1 (RBS) and Waterford Steam Electric Station, Unit 3 (Waterford-3).

Entergy requests adoption of TSTF-541, "Add Exceptions to Surveillance Requirements for Valves and Dampers Locked in the Actuated Position," which is an approved change to the Standard Technical Specifications (STS), into the ANO-1, ANO-2, GGNS, RBS and Waterford-3 Technical Specifications (TS). The proposed amendment modifies certain TS Surveillance Requirements (SRs) by adding exceptions to consider the SR met when automatic valves or dampers are locked, sealed, or otherwise secured in the actuated position, in order to consider

the SR met. Securing the automatic valve or damper in the actuated position may affect the operability of the system or any supported systems. The associated Limiting Condition for Operation (LCO) is met if the subject structure, system, or component (SSC) remains operable (i.e., capable of performing its specified safety function).

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

Entergy requests that the amendment be reviewed under the Consolidated Line Item Improvement Process (CLIIP). Approval of the proposed amendment is requested by April 30, 2022. Once approved, the amendment shall be implemented within 90 days.

There are no regulatory commitments made in this submittal.

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), Entergy is notifying the State of Arkansas, State of Mississippi and State of Louisiana of this amendment request by transmitting a copy of this letter and enclosure to the designated State Official.

Should you have any questions or require additional information, please contact Phil Couture, Sr. Manager, Fleet Regulatory Assurance, at 601-368-5102.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on September 23, 2021 .

Respectfully,



Ron Gaston

RWG/chm

Enclosure: Evaluation of the Proposed Change

Attachments to Enclosure:

1. Technical Specification Page Markups
2. Technical Specification Bases Page Markups (Information Only)
3. Retyped Technical Specification Pages

cc: NRC Region IV Regional Administrator
NRC Senior Resident Inspector – ANO
NRC Senior Resident Inspector – GGNS
NRC Senior Resident Inspector – RBS
NRC Senior Resident Inspector – Waterford-3
NRC Project Manager – Entergy Fleet
NRC Project Manager – ANO
NRC Project Manager – GGNS
NRC Project Manager – RBS
NRC Project Manager – Waterford-3
Designated State Official – Arkansas
Louisiana Department of Environmental Quality NRC Project Manager
State Health Officer, Mississippi State Department of Health

Enclosure

CNRO2021-00019

Evaluation of the Proposed Change

TABLE OF CONTENTS

1.0 SUMMARY DESCRIPTION 2

 1.1 ANO-1 SRs Affected by the Proposed Change 2

 1.2 ANO-2 SRs Affected by the Proposed Change 2

 1.3 GGNS SRs Affected by the Proposed Change 3

 1.4 RBS SRs Affected by the Proposed Change 4

 1.5 Waterford-3 SRs Affected by the Proposed Change 5

2.0 DETAILED DESCRIPTION 7

 2.1 Applicability of Safety Evaluation 7

 2.2 Variations 7

 2.2.1 ANO-1 7

 2.2.2 ANO-2 8

 2.2.3 GGNS 9

 2.2.4 RBS 10

 2.2.5 Waterford-3 11

 2.3 Licensee Verifications 14

3.0 REGULATORY EVALUATION 14

 3.1 No Significant Hazards Consideration Analysis 14

 3.2 Conclusions 15

4.0 ENVIRONMENTAL CONSIDERATION 15

5.0 ATTACHMENTS 16

EVALUATION OF THE PROPOSED CHANGE

1.0 SUMMARY DESCRIPTION

Entergy Operations, Inc. (Entergy) requests adoption of TSTF-541, "Add Exceptions to Surveillance Requirements for Valves and Dampers Locked in the Actuated Position," which is an approved change to the Standard Technical Specifications (STS), into the Arkansas Nuclear One, Unit 1 (ANO-1), Arkansas Nuclear One, Unit 2 (ANO-2), Grand Gulf Nuclear Station Unit 1 (GGNS), River Bend Station, Unit 1 (RBS) and Waterford Steam Electric Station, Unit 3 (Waterford-3) Technical Specifications (TS). The proposed amendment modifies the TS Surveillance Requirements (SRs) by adding exceptions to consider the SR met when automatic valves or dampers are locked, sealed, or otherwise secured in the actuated position, in order to consider the SR met. Securing the automatic valve or damper in the actuated position may affect the operability of the system or of any supported systems. The associated Limiting Condition for Operation (LCO) is met if the subject structure, system or component (SSC) remains operable (i.e., capable of performing its specified safety function). The following SRs are affected by the proposed change.

1.1 ANO-1 SRs Affected by the Proposed Change

For ANO-1, SRs in NUREG-1430, "Standard Technical Specifications Babcock and Wilcox Plants"

TS 3.6.7 "Spray Additive System"

This is ANO-1 TS 3.6.6. With the replacement of the NaOH Spray Additive System with NaTB baskets, TS 3.6.6 was renamed to Reactor Building (RB) Sump Buffering Agent. This ANO-1 TS does not require the modification TSTF-541 is offering.

TS 3.7.10 "Control Room Emergency Ventilation System (CREVS)"

This is ANO-1 TS 3.7.9 and SR 3.7.9.3. is affected

TS 3.7.12 "Emergency Ventilation System (EVS)"

This is ANO-1 TS 3.7.11 "Penetration Room Ventilation System (PRVS)." SR 3.7.11.3 is affected.

TS 3.7.13 "Fuel Storage Pool Ventilation System (FSPVS)"

ANO-1 does not have this TS and no changes are required.

1.2 ANO-2 SRs Affected by the Proposed Change

The ANO-2 TSs are based on NUREG-0212, "Standard Technical Specifications for Combustion Engineering Pressurized Water Reactors." As such, the ANO-2 TS numbering generally differs from that of the current Improved Standard Technical

Specifications (ISTS), and the actual TS wording may also differ. Therefore, each ANO-2 TS affected by TSTF-541 is listed below with any differences or variations discussed individually. ANO-2 has implemented TSTFs based on NUREG-1432 ISTS in the past by adapting the wording from the TSTF to the ANO-2 current TS format and verifying that it continues to meet the intent of the applicable TSTF NRC safety evaluation. The same has been done for TSTF-541.

For ANO-2, SRs in NUREG-1432, "Standard Technical Specifications Combustion Engineering Plants"

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

ANO-2 does not have this TS and no changes are required.

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

ANO-2 does not have this TS and no changes are required.

TS 3.7.10 "Essential Chilled Water (ECW)"

ANO-2 does not have this TS and no changes are required.

TS 3.7.11 "Control Room Emergency Air Cleanup System (CREACS)"

This is ANO-2 TS 3.7.6.1 "Control Room Emergency Ventilation and Air Conditioning System." SR 4.7.6.1.2.b is affected.

TS 3.7.13 "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)"

ANO-2 does not have this TS and no changes are required.

TS 3.7.14 "Fuel Building Air Cleanup System (FBACS)"

ANO-2 does not have this TS and no changes are required.

TS 3.7.15 "Penetration Room Exhaust Air Cleanup System (PREACS)"

ANO-2 does not have this TS and no changes are required.

1.3 GGNS SRs Affected by the Proposed Change

For GGNS, SRs in NUREG-1434, "Standard Technical Specifications General Electric BWR/6 Plants"

TS 3.5.1 "Emergency Core Cooling Systems (ECCS) Operating"

This is GGNS TS 3.5.1 and SR 3.5.1.5 is affected.

TS 3.5.2 "Reactor Pressure Vessel Water Inventory Control"

This TS is not part of standard TS (NUREG-1434) but was added under TSTF-542. SR 3.5.2.7 is affected.

The GGNS TS have incorporated, via Amendment 218 issued by the NRC on May 23, 2019 (ML19084A218), TSTF-542, Revision 2, "Reactor Pressure Vessel Water Inventory Control," which had not been incorporated into the standard TS on which TSTF-541 was based. The changes in TSTF-541 are equally applicable to SR 3.5.2.7 added by TSTF-542. Therefore, the TSTF-541 allowance is added to SR 3.5.2.7.

TS 3.5.3 "Reactor Core Isolation Cooling (RCIC) System"

This is GGNS TS 3.5.3 and SR 3.5.3.5 is affected.

TS 3.6.1.7 "Residual Heat Removal (RHR) Containment Spray System"

This is GGNS TS 3.6.1.7 and SR 3.6.1.7.4 is affected.

TS 3.6.4.3 "Standby Gas Treatment (SGT) System"

This is GGNS TS 3.6.4.3 and SR 3.6.4.3.3 is affected.

TS 3.7.1 "Standby Service Water (SSW) System and Ultimate Heat Sink (UHS)"

This is GGNS TS 3.7.1 and SR 3.7.1.4 is affected.

TS 3.7.2 "High Pressure Core Spray (HPCS) Service Water System (SWS),"

This is GGNS TS 3.7.2 and SR 3.7.2.2 is affected.

TS 3.7.3 "Control Room Fresh Air (CRFA) System"

This is GGNS TS 3.7.3 and SR 3.7.3.3 is affected.

1.4 RBS SRs Affected by the Proposed Change

For RBS, SRs in NUREG-1434, "Standard Technical Specifications General Electric BWR/6 Plants"

TS 3.5.1 "Emergency Core Cooling Systems (ECCS) Operating"

This is RBS TS 3.5.1 and SR 3.5.1.5 is affected.

TS 3.5.2 "Reactor Pressure Vessel Water Inventory Control"

This TS is not part of standard TS (NUREG-1434) but was added under TSTF-542. SR 3.5.2.6 is affected.

The RBS TS have incorporated, via Amendment 193 issued by the NRC on November 7, 2018 (ML18267A341), TSTF-542, Revision 2, "Reactor Pressure Vessel Water Inventory Control," which had not been incorporated into the standard TS on which TSTF-541 was based. The changes in TSTF-541 are equally applicable to SR 3.5.2.6 added by TSTF-542. Therefore, the TSTF-541 allowance is added to SR 3.5.2.6.

TS 3.5.3 "Reactor Core Isolation Cooling (RCIC) System"

This is RBS TS 3.5.3 and SR 3.5.3.5 is affected

TS 3.6.1.7 "Residual Heat Removal (RHR) Containment Spray System"

This TS is not included in the RBS TS. No changes required.

TS 3.6.4.3 "Standby Gas Treatment (SGT) System"

This is RBS TS 3.6.4.3. SR 3.6.4.3.3 and SR 3.6.4.3.4 are affected.

TS 3.7.1 "Standby Service Water (SSW) System and Ultimate Heat Sink (UHS)"

This is RBS TS 3.7.1 and SR 3.7.1.5 is affected.

TS 3.7.2, "High Pressure Core Spray (HPCS) Service Water System (SWS),"

This TS is not part of the RBS TSs and no SR are affected.

TS 3.7.3, "Control Room Fresh Air (CRFA) System"

This is RBS TS 3.7.2 and SR 3.7.2.3 is affected.

1.5 Waterford-3 SRs Affected by the Proposed Change

The Waterford-3 TSs are based on NUREG-0212, "Standard Technical Specifications for Combustion Engineering Pressurized Water Reactors." As such, the Waterford-3 TS numbering generally differs from that of the current ISTS, and the actual TS wording may also differ. Therefore, each Waterford-3 TS affected by TSTF-541 is listed below with any differences or variations discussed individually. Waterford-3 has implemented TSTFs based on NUREG-1432 ISTS in the past by adapting the wording from the TSTF to the Waterford-3 current TS format and verifying that it continues to meet the intent of the applicable TSTF NRC safety evaluation. The same has been done for TSTF-541.

For Waterford-3, SRs in NUREG-1432, "Standard Technical Specifications Combustion Engineering Plants"

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

This is Waterford-3 TS 3.6.6.1 "Shield Building Ventilation System."
SR 4.6.6.1.d.2 and SR 4.6.6.1.d.3 are affected.

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

Waterford-3 does not have this TS and no changes are required.

TS 3.7.10 "Essential Chilled Water (ECW)"

This is Waterford-3 TS 3.7.12 "Essential Services Chilled Water System." Waterford-3 SRs do not require verification of automatic dampers or valves repositioning on an actuation signal. Therefore, no changes are required.

TS 3.7.11 "Control Room Emergency Air Cleanup System (CREACS)"

This is Waterford-3 TS 3.7.6.1 "Control Room Emergency Filtration System." The current Waterford-3 TS SRs that would be affected by this TSTF already contain "...except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position..." Therefore, no changes are required.

TS 3.7.13 "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)"

This TS is consolidated along with TS 3.7.15 into Waterford-3 TS 3.7.7 and titled "Controlled Ventilation Area System." SR 4.7.7.d.2 and SR 4.7.7.d.3 are affected.

TS 3.7.14 "Fuel Building Air Cleanup System (FBACS)"

Waterford-3 has a Fuel Handling Building Ventilation System; however, this system does not have a specified TS function for Waterford-3 and is not included in the Waterford-3 TSs. As such, Waterford-3 does not have a system that is considered equivalent to NUREG-1432 TS 3.7.14. Therefore, no changes are required.

TS 3.7.15 "Penetration Room Exhaust Air Cleanup System (PREACS)"

This TS is consolidated along with TS 3.7.13 into Waterford-3 TS 3.7.7 and titled "Controlled Ventilation Area System." SR 4.7.7.d.2 and SR 4.7.7.d.3 are affected.

While the proposed exceptions permit automatic valves and dampers that are locked, sealed, or otherwise secured in the actuated position to be excluded from the SR in order to consider the SR met, the proposed changes will not permit a system that is made inoperable by locking, sealing, or otherwise securing an automatic valve or damper in the actuated position to be considered operable. As stated in the SR 3.0.1 (for ANO-2 and Waterford-3 SR 4.0.1) Bases, "Nothing in this Specification, however, is to be construed as implying that systems or components are OPERABLE when: a. The systems or components are known to be inoperable, although still meeting the SRs."

2.0 DETAILED DESCRIPTION

2.1 Applicability of Safety Evaluation

Entergy has reviewed the safety evaluation for TSTF-541 provided to the Technical Specifications Task Force in a letter dated December 10, 2019. This review included a review of the NRC staff's evaluation, as well as the information provided in TSTF-541. As described herein, Entergy has concluded that the justifications presented in TSTF-541 and the safety evaluation prepared by the NRC staff are applicable to ANO-1, ANO-2, GGNS, RBS, and Waterford-3 and justify this amendment for the incorporation of the changes to the ANO-1, ANO-2, GGNS, RBS, and Waterford-3 TS.

Entergy acknowledges that under the proposed change, the affected valves and dampers may be excluded from the SR when locked, sealed or otherwise secured in the actuated position. However, if the safety analysis assumes movement from the actuated position following an event, or the system is rendered inoperable by locking, sealing, or otherwise securing the valve or damper in the actuated position, then the system cannot perform its specified safety function and is inoperable regardless of whether the SR is met.

Entergy acknowledges for components for which the SR allowance can be utilized, the SR must be verified to have been met within its required Frequency after removing the valve or damper from the locked, sealed or otherwise secured status. If the SR exception is utilized to not test the actuation of a valve or damper and the specified Frequency of the SR is exceeded without testing the component, the SR must be performed on the component when it is returned to service in order to meet the SR.

2.2 Variations

Entergy is proposing the following variations from the TS changes described in TSTF-541 or the applicable parts of the NRC staff's safety evaluation.

2.2.1 ANO-1

2.2.1.1 The ANO-1 TS utilize different numbering and titles than the Standard Technical Specifications on which TSTF-541 was based. Specifically,

- NUREG-1430 TS 3.7.10 "Control Room Emergency Ventilation System (CREVS)" is TS 3.7.9 for ANO-1. As such, the SR affected by this change is SR 3.7.9.3.
- NUREG-1430 TS 3.7.12 "Emergency Ventilation System (EVS)" is TS 3.7.11 "Penetration Room Ventilation System (PRVS)" for ANO-1. As such, the SR affected by this change is SR 3.7.11.3.

These differences are administrative and do not affect the applicability of TSTF-541 to the ANO-1 TS.

2.2.1.2 The ANO-1 TS contain requirements that differ from the Standard Technical Specifications on which TSTF-541 was based, but these differences do not affect the applicability of the TSTF-541 justification.

- NUREG-1430 TS 3.7.10 for ANO-1 is TS 3.7.9. TS 3.7.9 as approved for ANO-1, has slightly different wording but still meet the intent of NUREG-1430.
 - NUREG SR 3.7.10.3 reads, "Verify [each CREVS train actuates] [or the control room isolates] on an actual or simulated actuation signal."

ANO-1 SR 3.7.9.3 reads, "Verify the CREVS automatically isolates the Control Room and switches into a recirculation mode of operation on an actual or simulated actuation signal." This is an SR that will be modified by the TSTF. This variance does not change the intent of the TSTF change.

- NUREG-1430 TS 3.7.12 for ANO-1 is TS 3.7.11. SR 3.7.11.3, as approved for ANO-1, has slightly different wording but still meet the intent of NUREG-1430.
 - NUREG LCO 3.7.12 Title is "Emergency Ventilation System (EVS)."

This TS for ANO-1 is TS 3.7.11 and is titled "Penetration Room Ventilation System (PRVS)." This variance has no effect of the text change being made to SR 3.7.11.3.

2.2.1.3 The ANO-1 Technical Specifications contain a Surveillance Frequency Control Program. Therefore, the Frequency for the affected SRs is "In accordance with the Surveillance Frequency Control Program." This has no effect on the applicability of the proposed change.

2.2.2 ANO-2

2.2.2.1 The current ANO-2 TS format, numbering, and terminology is consistent with the NUREG-0212 Standard Technical Specifications (STS). The NUREG-0212 STS numbering for surveillance requirements differs from the numbering in NUREG-1432, "Standard Technical Specifications Combustion Engineering Plants," (i.e., the Improved STS which were used to develop TSTF-541). Specifically,

- NUREG-1432 TS 3.7.11 "Control Room Emergency Air Cleanup System (CREACS)" is TS 3.7.6.1 for ANO-2. As such, the SR affected by this change is SR 4.7.6.1.2.b.
 - This variation is administrative, consistent with the current ANO-2 TS, as well as the underlying NUREG-0212 basis for the current ANO-2 TS and does not affect the applicability of TSTF-541 to the ANO-2 TS.

2.2.2.2 The ANO-2 TS contain requirements that differ from the Standard Technical Specifications on which TSTF-541 was based, but these differences do not affect the applicability of the TSTF-541 justification.

- NUREG-1432 TS 3.7.11 is titled "Control Room Emergency Air Cleanup System (CREACS)," which for ANO-2 is TS 3.7.6.1 "Control Room Emergency Ventilation and Air Conditioning System". The ANO-2 TS 3.7.6.1 combines the requirements of NUREG-1432 TS 3.7.11 "Control Room Emergency Air Cleanup (CREACS)" and NUREG-1432 TS 3.7.12 "Control Room Emergency Air Temperature Control System (CREATCS)" into one TS with the required Actions and Surveillance Requirements of the aforementioned NUREG-1432 TS that are applicable to ANO-2. TS 3.7.6.1 as approved for ANO-2, has slightly different wording, but still meets the intent of NUREG-1432.
- NUREG SR 4.7.6.3 reads, "Verify each CREACS train actuates on an actual or simulated actuation signal."

ANO-2 SR 4.7.6.1.2, reads, "Each control room emergency air filtration system shall be demonstrated OPERABLE:"

- SR 4.7.6.1.2.b reads "In accordance with the Surveillance Frequency Control Program by verifying that on a control room high radiation signal, either actual or simulated, the system automatically isolates the control room and switches into a recirculation mode of operation." This is an SR that will be modified by the TSTF. This variance does not change the intent of the TSTF change.

2.2.2.3 The ANO-2 Technical Specifications contain a Surveillance Frequency Control Program. Therefore, the Frequency for the affected SRs is "In accordance with the Surveillance Frequency Control Program." This has no effect on the applicability of the proposed change.

2.2.3 GGNS

2.2.3.1 The GGNS TS utilize different numbering than the Standard Technical Specifications on which TSTF-541 was based. Specifically,

- NUREG-1434 TS 3.6.1.7 "Residual Heat Removal (RHR) Containment Spray System," SR 3.6.1.7.3 is SR 3.6.1.7.4 for GGNS
- NUREG-1434 TS 3.7.1 "Standby Service Water (SSW) System and Ultimate Heat Sink (UHS)" SR 3.7.1.6 is SR 3.7.1.4 for GGNS.
- NUREG-1434 TS 3.7.2, "High Pressure Core Spray (HPCS) Service Water System (SWS)" SR 3.7.2.3 is SR 3.7.2.2 for GGNS.

These differences are administrative and do not affect the applicability of TSTF-541 to the GGNS TS.

2.2.3.2 The GGNS TS contain requirements that differ from the Standard Technical Specifications on which TSTF-541 was based, but these differences do not affect the applicability of the TSTF-541 justification.

- NUREG-1434 TS 3.6.4.3, "Standby Gas Treatment (SGT) System," SR 3.6.4.3.4 is not used in the GGNS TS.

2.2.3.3 The GGNS TS have incorporated TSTF-542, Revision 2, "Reactor Pressure Vessel Water Inventory Control," which had not been incorporated into the standard TS on which TSTF-541 was based. The changes in TSTF-541 are equally applicable to new GGNS SR 3.5.2.7 added by TSTF-542. Therefore, the TSTF-541 allowance is added to SR 3.5.2.7.

2.2.3.4 The GGNS Technical Specifications contain a Surveillance Frequency Control Program. Therefore, the Frequency for the affected SRs is "In accordance with the Surveillance Frequency Control Program." This has no effect on the applicability of the proposed change.

2.2.4 RBS

2.2.4.1 The RBS TS utilize different numbering and titles than the Standard Technical Specifications on which TSTF-541 was based. Specifically,

- NUREG-1434 TS 3.7.1 "Standby Service Water (SSW) System and Ultimate Heat Sink (UHS)" SR 3.7.1.6 is SR 3.7.1.5 for RBS.
- NUREG-1434 TS 3.7.3, "Control Room Fresh Air (CRFA) System" is TS 3.7.2 for RBS. As such, the SR affected by this change is SR 3.7.2.3.

These differences are administrative and do not affect the applicability of TSTF-541 to the RBS TS.

2.2.4.2 The RBS TS contain requirements that differ from the Standard Technical Specifications on which TSTF-541 was based, but these differences do not affect the applicability of the TSTF-541 justification.

- NUREG-1434 TS 3.6.1.7 "Residual Heat Removal (RHR) Containment Spray System." The RBS TS do not contain this TS and therefore the SR 3.6.1.7.3 does not exist.
- NUREG-1434 TS 3.7.2, "High Pressure Core Spray (HPCS) Service Water System (SWS)." The RBS TS do not contain this TS and therefore the SR 3.7.2.3 does not exist.

2.2.4.3 The RBS TS have incorporated TSTF-542, Revision 2, "Reactor Pressure Vessel Water Inventory Control," which had not been incorporated into the

standard TS on which TSTF-541 was based. The changes in TSTF-541 are equally applicable to new RBS SR 3.5.2.6 added by TSTF-542. Therefore, the TSTF-541 allowance is added to SR 3.5.2.6.

2.2.4.4 The RBS Technical Specifications contain a Surveillance Frequency Control Program. Therefore, the Frequency for the affected SRs is "In accordance with the Surveillance Frequency Control Program." This has no effect on the applicability of the proposed change.

2.2.5 Waterford-3

2.2.5.1 The current Waterford-3 TS format, numbering, and terminology is consistent with the NUREG-0212 Standard Technical Specifications (STS). The NUREG-0212 STS numbering for surveillance requirements differs from the numbering in NUREG-1432, "Standard Technical Specifications Combustion Engineering Plants," (i.e., the Improved STS which were used to develop TSTF-541). Specifically,

- NUREG-1432 TS 3.6.8, "Shield Building Exhaust Air Cleanup System (SBEACS) (Dual)," is Waterford-3 TS 3.6.6.1 and titled "Shield Building Ventilation System." The Waterford-3 TS SRs affected by the proposed changes are SR 4.6.6.1.d.2 and SR 4.6.6.1.d.3.
- NUREG-1432 TS 3.7.10, "Essential Chilled Water (ECW)," is Waterford-3 TS 3.7.12 "Essential Services Chilled Water System." Waterford-3 SRs do not require verification of automatic dampers or valves repositioning on an actuation signal. Therefore, no changes are required.
- NUREG-1432 TS 3.7.11, "Control Room Emergency Air Cleanup System (CREACS)," is Waterford-3 TS 3.7.6.1 and titled "Control Room Emergency Air Filtration System." The current Waterford-3 TS SRs that would be affected by this TSTF, already contain "...except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position..." Therefore, no changes are required.
- NUREG-1432 TS 3.7.13, "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)," and TS 3.7.15, "Penetration Room Exhaust Air Cleanup System (PREACS)," are consolidated into Waterford-3 TS 3.7.7 and titled "Controlled Ventilation Area System." The Waterford-3 TS SRs affected by the proposed changes are SR 4.7.7.d.2 and SR 4.7.7.d.3.

These variations are administrative, consistent with the current Waterford-3 TS, as well as the underlying NUREG-0212 basis for the current Waterford-3 TS and does not affect the applicability of TSTF-541 to the Waterford-3 TS.

2.2.5.2 The Waterford-3 TS contain requirements that differ from the Standard Technical Specifications on which TSTF-541 was based, but these differences do not affect the applicability of the TSTF-541 justification.

- NUREG-1432 TS 3.6.8 is titled "Shield Building Exhaust Air Cleanup System (SBEACS) (Dual)," which for Waterford-3 is TS 3.6.6.1 "Shield Building Ventilation System." The affected SRs from the TSTF-541 read:
 - SR 3.6.8.3 "Verify each SBEACS train actuates on an actual or simulated actuation signal,"
 - SR 3.6.8.4 "Verify each SBEACS filter bypass damper can be opened."

This is Waterford-3 TS 3.6.6.1 "Shield Building Ventilation System." SR 4.6.6.1.d.2 and SR 4.6.6.1.d.3 are affected and read:

- d. In accordance with the Surveillance Frequency Control Program by: ...
 - SR 4.6.6.1.d.2 "Verifying that the system starts on a safety injection actuation test signal.,"
 - SR 4.6.6.1.d.3 "Verifying that the filter cooling bypass valves can be manually cycled."

The SR 4.6.6.1.d.2 variance in wording from NUREG-1432 SR 3.6.8.3 does not alter the intent of the TSTF-541 change.

With respect to SR 4.6.6.1.d.3, it is proposed to replace the words "manually cycled" with the word "opened" to be consistent with NUREG-1432 SR 3.6.8.4. The filter cooling bypass valves of the Shield Building Ventilation System remain open to assure the non-operating filter train has adequate airflow for filter cooling while the in-service filter train is operating. The filter trains themselves cannot be bypassed. The filter cooling bypass valves are butterfly valves, not dampers. Therefore, the SR 4.6.6.1.d.3 variance in wording from NUREG-1432 SR 3.6.8.4 regarding the filter cooling bypass valves is necessary to accurately describe the testing requirement.

- NUREG-1432 TS 3.7.13 titled "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)" and TS 3.7.15 titled "Penetration Room Exhaust Air Cleanup System (PREACS)" and combined into one TS at Waterford-3, TS 3.7.7 and titled "Controlled Ventilation Area System."

Waterford-3 Controlled Ventilation Area System performs the accident mitigation functions of high efficiency particulate filtration and iodine adsorption of the air exhausted from the ECCS pump rooms and the containment penetration area, and Waterford-3 TS 3.7.7 provides the operability requirements. As such, the TSTF-541 exceptions identified for NUREG-1432 TS SRs 3.7.13.3 and 3.7.13.5 and TS SRs 3.7.15.3 and 3.7.15.5 can be applied to Waterford-3 TS SRs 4.7.7.d.2 and 4.7.7.d.3.

The NUREG-1432 SRs read:

FREQUENCY = "In accordance with the Surveillance Frequency Control Program"

- SR 3.7.13.3 "Verify each ECCS PREACS train actuates on an actual or simulated actuation signal"
- SR 3.7.13.5 "Verify each ECCS PREACS filter bypass damper can be opened"
- SR 3.7.15.3 "Verify each PREACS train actuates on an actual or simulated actuation signal"
- SR 3.7.15.5 "Verify each PREACS filter bypass damper can be opened"

The Waterford-3 SRs read:

d. In accordance with the Surveillance Frequency Control Program by: ...

- SR 4.7.7.d.2 "Verifying that the system starts on a Safety Injection Actuation Test Signal and achieves and maintains a negative pressure of ≥ 0.25 inch water gauge within 45 seconds."
- SR 4.7.7.d.3 "Verifying that the filter cooling bypass valves can be manually cycled."

The Waterford-3 SR 4.7.7.d.2 variance in wording does not alter the intent of the TSTF-541 change and preserves the current licensing basis.

To maintain consistency with NUREG-1432 SRs 3.7.13.5 and 3.7.15.5, in SR 4.7.7.d.3, the words "manually cycled" will be replaced with the word "opened." The filter cooling bypass valves of the Controlled Ventilation Area System remain open to assure the non-operating filter train has adequate airflow for filter cooling while the in-service filter train is operating. The filter trains themselves cannot be bypassed. The filter cooling bypass valves are butterfly valves, not dampers. Therefore, the variance in Waterford-3 TS SR 4.7.7.d.3 regarding the filter cooling bypass valves is necessary to accurately describe the testing requirement.

2.2.5.3 The Waterford-3 Technical Specifications contain a Surveillance Frequency Control Program. Therefore, the Frequency for the affected SRs is "In accordance with the Surveillance Frequency Control Program." This has no effect on the applicability of the proposed change.

2.2.5.4 Editorial changes in font, font size, and formatting were made to Waterford-3 TS pages affected by this License Amendment Request.

2.3 Licensee Verifications

Entergy confirms that existing administrative processes, such as the Corrective Action Program, Operability Determination process, the maintenance, design control, configuration control, and operating procedures, etc., will be used to assess the operability of the system or of any supported systems when utilizing the SR allowances, which includes consideration of whether movement of the affected valves or dampers following an event is assumed in the safety analysis.

3.0 REGULATORY EVALUATION

3.1 No Significant Hazards Consideration Analysis

Entergy Operations, Inc. (Entergy) requests adoption of Technical Specification Task Force (TSTF) TSTF-541, "Add Exceptions to Surveillance Requirements for Valves and Dampers Locked in the Actuated Position," which is an approved change to the Standard Technical Specifications (STS), into the Arkansas Nuclear One, Unit 1 (ANO-1), Arkansas Nuclear One, Unit 2 (ANO-2), Grand Gulf Nuclear Station Unit 1 (GGNS), River Bend Station, Unit 1 (RBS), and Waterford Steam Electric Station, Unit 3 (Waterford-3) Technical Specifications (TS). The proposed amendment modifies the TS Surveillance Requirements (SRs) by adding exceptions to consider the SR met when automatic valves or dampers are locked, sealed, or otherwise secured in the actuated position, in order to consider the SR met. Securing the automatic valve or damper in the actuated position may affect the operability of the system or of any supported systems. The associated Limiting Condition for Operation (LCO) is met if the subject structure, system or component (SSC) remains operable (i.e., capable of performing its specified safety function).

Entergy has evaluated whether or not 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 change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

The proposed change revises SRs by adding exceptions excluding from actuation and isolation time testing those valves and dampers that are locked, sealed or otherwise secured in the actuated position. The performance or lack of performance of SRs is not an initiator of any accident previously evaluated. As a result, the proposed change has no effect on the probability of any accident previously evaluated. The proposed change excludes performance of portions of certain SRs, but the SSC must still be capable of performing the safety functions assumed in the accident analysis. Otherwise, the SSC is inoperable, and the associated TS Actions are followed. As a result, the SSCs continue to perform their mitigating functions and the consequences of any accident previously evaluated are not affected.

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

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

Response: No

The proposed change revises SRs by adding exceptions excluding from actuation and isolation time testing those valves and dampers that are locked, sealed or otherwise secured in the actuated position. The proposed change will not change the design function or operability requirements of the affected SSCs. The SSC must still be capable of performing the safety functions assumed in the accident analysis or the SSC is inoperable, and the associated TS Actions are followed. The proposed change does not create any credible new failure mechanisms, malfunctions, or accident initiators not considered in the design and licensing bases.

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 change involve a significant reduction in a margin of safety?

Response: No

The proposed change revises SRs by adding exceptions excluding from actuation and isolation time testing those valves and dampers that are locked, sealed or otherwise secured in the actuated position. The proposed change does not alter the manner in which safety limits, limiting safety system settings or limiting conditions for operation are determined. The safety analysis assumptions and acceptance criteria are not affected by this change.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, Entergy 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 Conclusions

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

The proposed change would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR Part 20, or would change an

inspection or surveillance requirement. However, the proposed change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed change.

5.0 ATTACHMENTS

1. Technical Specification Page Markups
2. Technical Specification Bases Page Markups (Information Only)
3. Retyped Technical Specification Pages

Enclosure, Attachment 1

CNRO2021-00019

Technical Specification Page Markups

**ANO-1
ANO-2
GGNS
RBS
Waterford-3**

Plant Affected	Number of TS Pages
Arkansas Nuclear One – Unit 1	2
Arkansas Nuclear One – Unit 2	1
Grand Gulf Nuclear Station, Unit 1	8
River Bend Station, Unit 1	6
Waterford Steam Electric Station, Unit 3	2

Total Number of Pages in Attachment 1

19

Enclosure, Attachment 1

CNRO2021-00019

Technical Specification Page Markups

Arkansas Nuclear One – Unit 1

Technical Specification Affected

TS Number	Title	Number of Pages
3.7.9	Control Room Emergency Ventilation System (CREVS)	1
3.7.11	Penetration Room Ventilation System (PRVS)	1
Total ANO-1 TS Pages		2

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.9.1	Operate each CREVS train for ≥ 15 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.7.9.2	Perform required CREVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.9.3	Verify the CREVS automatically isolates the Control Room and switches into a recirculation mode of operation on an actual or simulated actuation signal, <u>except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.</u>	In accordance with the Surveillance Frequency Control Program
SR 3.7.9.4	Perform required CRE unfiltered air leakage testing in accordance with the Control Room Envelope Habitability Program.	In accordance with the Control Room Envelope Habitability Program.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Operate each PRVS train for ≥ 15 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.7.11.2	Perform required PRVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.11.3	Verify each PRVS train actuates on an actual or simulated actuation signal, <u>except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.</u>	In accordance with the Surveillance Frequency Control Program

Enclosure, Attachment 1

CNRO2021-00019

Technical Specification Page Markups

Arkansas Nuclear One – Unit 2

Technical Specification Affected

TS Number	Title	Number of Pages
3.7.6.1	Control Room Emergency Ventilation and Air Conditioning System	1
Total ANO-2 TS Pages		<u>1</u>

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS

- 4.7.6.1.1 Each control room emergency air conditioning system shall be demonstrated OPERABLE:
- a. In accordance with the Surveillance Frequency Control Program by:
 1. Starting each unit from the control room, and
 2. Verifying that each unit operates for at least 1 hour and maintains the control room air temperature ≤ 84 °F D.B.
 - b. In accordance with the Surveillance Frequency Control Program by verifying a system flow rate of 9900 cfm \pm 10%.
- 4.7.6.1.2 Each control room emergency air filtration system shall be demonstrated OPERABLE:
- a. In accordance with the Surveillance Frequency Control Program by verifying that the system operates for at least 15 minutes.
 - b. In accordance with the Surveillance Frequency Control Program by verifying that on a control room high radiation signal, either actual or simulated, the system automatically isolates the control room and switches into a recirculation mode of operation, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.
 - c. By performing the required Control Room Emergency Ventilation filter testing in accordance with the Ventilation Filter Testing Program (VFTP).
 - d. Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program.

Enclosure, Attachment 1

CNRO2021-00019

Technical Specification Page Markups

Grand Gulf Nuclear Station, Unit 1

Technical Specification Affected

TS Number	Title	Number of Pages
3.5.1	"Emergency Core Cooling Systems (ECCS) Operating"	1
3.5.2	"Reactor Pressure Vessel Water Inventory Control"	1
3.5.3	"Reactor Core Isolation Cooling (RCIC) System"	1
3.6.1.7	"Residual Heat Removal (RHR) Containment Spray System"	1
3.6.4.3	"Standby Gas Treatment (SGT) System"	1
3.7.1	"Standby Service Water (SSW) System and Ultimate Heat Sink (UHS)"	1
3.7.2	"High Pressure Core Spray (HPCS) Service Water System (SWS),"	1
3.7.3	"Control Room Fresh Air (CRFA) System"	1

Total GGNS TS Pages 8

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.5 -	<p>-----NOTE-----</p> <p>Vessel injection/spray may be excluded.</p> <p>-----</p> <p>Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal, <u>except for valves that are locked, sealed, or otherwise secured in the actuated position.</u></p>	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.6	<p>-----NOTE-----</p> <p>Valve actuation may be excluded.</p> <p>-----</p> <p>Verify the ADS actuates on an actual or simulated automatic initiation signal.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.7	<p>-----NOTE-----</p> <p>Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test.</p> <p>-----</p> <p>Verify each ADS valve relief-mode actuator strokes when manually actuated.</p>	In accordance with the INSERVICE TESTING PROGRAM on a STAGGERED TEST BASIS for each valve solenoid

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.6	Operate the required ECCS injection/spray subsystem through the test return line for ≥ 10 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.7	Verify each valve credited for automatically isolating a penetration flow path actuates to the isolation position on an actual or simulated isolation signal, <u>except for valves that are locked, sealed, or otherwise secured in the actuated position.</u>	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.8	<p>-----NOTE----- Vessel injection/spray may be excluded. -----</p> <p>Verify the required LPCI or LPCS subsystem actuates on a manual initiation signal, or the required HPCS System can be manually operated.</p>	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.5.3.5</p> <p>-----NOTE----- Vessel injection may be excluded. -----</p> <p>Verify the RCIC System actuates on an actual or simulated automatic initiation signal, <u>except for valves that are locked, sealed, or otherwise secured in the actuated position.</u></p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.7.1</p> <p>-----NOTE-----</p> <ol style="list-style-type: none"> 1. RHR containment spray subsystems may be considered OPERABLE during alignment and operation for decay heat removal when below the RHR cut in permissive pressure in MODE 3 if capable of being manually realigned and not otherwise inoperable. 2. Not required to be met for system vent flow paths opened under administrative control. <p>-----</p> <p>Verify each RHR containment 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.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.1.7.2</p> <p>Verify RHR containment spray subsystem locations susceptible to gas accumulation are sufficiently filled with water.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.1.7.3</p> <p>Verify each RHR pump develops a flow rate of ≥ 7450 gpm on recirculation flow through the associated heat exchanger to the suppression pool.</p>	<p>In accordance with the INSERVICE TESTING PROGRAM</p>
<p>SR 3.6.1.7.4</p> <p>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, <u>except for valves that are locked, sealed, or otherwise secured in the actuated position.</u></p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.3.1	Operate each SGT subsystem for ≥ 15 continuous minutes with heaters operating.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.3.2	Perform required SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.3.3	Verify each SGT subsystem actuates on an actual or simulated initiation signal, <u>except for dampers that are locked, sealed, or otherwise secured in the open position.</u>	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.1.3	Verify each required SSW subsystem manual, power operated, and automatic valve in the flow path servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.1.4	Verify each SSW subsystem actuates on an actual or simulated Initiation signal, <u>except for valves that are locked, sealed, or otherwise secured in the actuated position.</u>	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.2 High Pressure Core Spray (HPCS) Service Water System (SWS)

LCO 3.7.2 The HPCS SWS shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. HPCS SWS inoperable.	A.1 Declare HPCS System inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.2.1 Verify each required HPCS SWS manual, power operated, and automatic valve in the flow path servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.2.2 Verify the HPCS SWS actuates on an actual or simulated initiation signal, <u>except for valves that are locked, sealed, or otherwise secured in the actuated position.</u>	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.3.3	Verify each CRFA subsystem actuates on an actual or simulated initiation signal, <u>except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.</u>	In accordance with the Surveillance Frequency Control Program
SR 3.7.3.4	Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program.	In accordance with the Control Room Envelope Habitability Program

Enclosure, Attachment 1

CNRO2021-00019

Technical Specification Page Markups

River Bend Station, Unit 1

Technical Specification Affected

TS Number	Title	Number of Pages
3.5.1	"Emergency Core Cooling Systems (ECCS) Operating"	1
3.5.2	"Reactor Pressure Vessel Water Inventory Control"	1
3.5.3	"Reactor Core Isolation Cooling (RCIC) System"	1
3.6.4.3	"Standby Gas Treatment (SGT) System"	1
3.7.1	"Standby Service Water (SSW) System and Ultimate Heat Sink (UHS)"	1
3.7.2	"Control Room Fresh Air (CRFA) System"	1

Total RBS TS Pages 6

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.5	<p>-----NOTE----- Vessel injection/spray may be excluded. -----</p> <p>Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal, <u>except for valves that are locked, sealed, or otherwise secured in the actuated position.</u></p>	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.6	<p>-----NOTE----- Valve actuation may be excluded. -----</p> <p>Verify the ADS actuates on an actual or simulated automatic initiation signal.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.7	<p>-----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -----</p> <p>Verify each ADS valve relief mode actuator strokes when manually actuated.</p>	In accordance with the Inservice Testing Program on a STAGGERED TEST BASIS for each valve solenoid

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.5	<p>-----NOTES-----</p> <p>1. Operation may be through the test return line. 2. Credit may be taken for normal system operation to satisfy this SR.</p> <p>-----</p> <p>Operate the required ECCS injection/spray subsystem for \geq 10 minutes.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.6	<p>Verify each valve credited for automatically isolating a penetration flow path actuates to the isolation position on an actual or simulated actuation signal, except for valves that are locked, sealed, or otherwise secured in the actuated position.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.7	<p>-----NOTE-----</p> <p>Vessel injection/spray may be excluded.</p> <p>-----</p> <p>Verify the required ECCS injection/spray subsystem can be manually operated.</p>	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.5.3.5</p> <p>-----NOTE----- Vessel injection may be excluded. -----</p> <p>Verify the RCIC System actuates on an actual or simulated automatic initiation signal, <u>except for valves that are locked, sealed, or otherwise secured in the actuated position.</u></p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.3.1	Operate each SGT subsystem for ≥ 15 continuous minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.3.2	Perform required SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.3.3	Verify each SGT subsystem actuates on an actual or simulated initiation signal, <u>except for dampers that are locked, sealed, or otherwise secured in the actuated position.</u>	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.3.4	Verify each SGT filter cooling bypass damper can be opened and the fan started, <u>except for dampers that are locked, sealed, or otherwise secured in the actuated position.</u>	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.1.3	Operate each cooling tower fan cell for ≥ 15 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.7.1.4	Verify each required SSW subsystem manual, power operated, and automatic valve in the flow path servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.1.5	Verify each SSW subsystem actuates on an actual or simulated initiation signal, <u>except for valves that are locked, sealed, or otherwise secured in the actuated position.</u>	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>F. Two CRFA subsystems inoperable during movement of recently irradiated fuel assemblies in the primary containment or fuel building.</p> <p><u>OR</u></p> <p>One or more CRFA subsystems inoperable due to inoperable CRE boundary during movement of recently irradiated fuel assemblies in the primary containment or fuel building.</p>	<p>F.1 Suspend movement of recently irradiated fuel assemblies in the primary containment and fuel building.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.2.1 Operate each CRFA subsystem for ≥ 15 continuous minutes.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.7.2.2 Perform required CRFA filter testing in accordance with the Ventilation Filter Testing Program (VFTP).</p>	<p>In accordance with the VFTP</p>
<p>SR 3.7.2.3 Verify each CRFA subsystem actuates on an actual or simulated initiation signal, <u>except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.</u></p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

Enclosure, Attachment 1

CNRO2021-00019

Technical Specification Page Markups

Waterford Steam Electric Station, Unit 3

Technical Specification Affected

TS Number	Title	Number of Pages
3.6.6.1	"Shield Building Ventilation System."	1
3.7.7	"Controlled Ventilation Area System."	1
Total Waterford-3 TS Pages		<u>2</u>

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

1. Verifying that the ventilation system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 10,000 cfm \pm 10%.
 2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 0.5% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity of 70%.
 3. Verifying a system flow rate of 10,000 cfm \pm 10% during system operation when tested in accordance with ANSI N510-1975.
- c. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 0.5% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity of 70%.
- d. In accordance with the Surveillance Frequency Control Program by:
1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 7.8 inches water gauge while operating the system at a flow rate of 10,000 cfm \pm 10%.
 2. Verifying that the system starts on a safety injection actuation test signal, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.
 3. Verifying that the filter cooling bypass valves can be ~~manually cycled~~ opened, except for valves that are locked, sealed, or otherwise secured in the open position.
 4. Verifying that each system produces a negative pressure of greater than or equal to 0.25 inch water gauge in the annulus within 1 minute after a start signal.
 5. Verifying that the heaters dissipate 60 \pm 6.0, -6.0 kW when tested in accordance with ANSI N510-1975.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 0.5% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity of 70%.
- d. In accordance with the Surveillance Frequency Control Program by:
 - 1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 7.8 inches water gauge while operating the system at a flow rate of 3000 cfm \pm 10%.
 - 2. Verifying that the system starts on a Safety Injection Actuation Test Signal and achieves and maintains a negative pressure of \geq 0.25 inch water gauge within 45 seconds, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.
 - 3. Verifying that the filter cooling bypass valves can be ~~manually cycled~~ manually opened, except for valves that are locked, sealed, or otherwise secured in the open position.
 - 4. Verifying that the heaters dissipate 20 + 2.0, -2.0 kW when tested in accordance with ANSI N510-1975.
- e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99.95% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 3000 cfm \pm 10%.
- f. After each complete or partial replacement of a charcoal absorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99.95% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 3000 cfm \pm 10%.

Enclosure, Attachment 2

CNRO2021-00019

Technical Specification Bases Page Markups (Information Only)

**ANO-1
ANO-2
GGNS
RBS
Waterford-3**

Plant Affected	Number of TS Bases Pages
Arkansas Nuclear One – Unit 1	3
Arkansas Nuclear One – Unit 2	2
Grand Gulf Nuclear Station, Unit 2	9
River Bend Station, Unit 1	10
Waterford Steam Electric Station, Unit 3	2

Total Number of Pages in Attachment 2

26

Enclosure, Attachment 2

CNRO2021-00019

Technical Specification Bases Page Markups (Information Only)

Arkansas Nuclear One – Unit 1

Technical Specification Bases Affected

TS Bases Number	Title	Number of Pages
3.7.9	Control Room Emergency Ventilation System (CREVS)	2
3.7.11	Penetration Room Ventilation System (PRVS)	1
Total ANO-1 TS Bases Pages		<u>3</u>

ACTIONS (continued)

F.1

If both CREVS trains are inoperable in MODE 1, 2, 3, or 4 for reasons other than an inoperable CRE boundary (i.e., Condition B), the CREVS may not be capable of performing the intended function and a loss of safety function has occurred. Therefore, LCO 3.0.3 must be entered immediately.

SURVEILLANCE REQUIREMENTS

SR 3.7.9.1

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not severe, testing each train on a monthly basis adequately checks this system by initiating flow through the HEPA filters and charcoal adsorbers. The CREVS is designed without heaters and need only be operated for ≥ 15 minutes to demonstrate the function of the system. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.7.9.2

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

SR 3.7.9.3

This SR verifies that the CREVS automatically isolates the CRE within 10 seconds and switches into a recirculation mode of operation with flow through the HEPA filters and charcoal adsorber banks on an actual or simulated actuation signal. 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 Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.9.4 (continued)

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

The CRE is considered habitable when the radiological dose to CRE occupants calculated in the licensing basis analyses of DBA consequences is no more than 5 rem TEDE and the CRE occupants are protected from hazardous chemicals and smoke. This SR verifies that the unfiltered air leakage into the CRE is no greater than the flow rate assumed in the licensing basis analyses of DBA consequences. When unfiltered air leakage is greater than the assumed flow rate, Condition B must be entered. Required Action B.3 allows time to restore the CRE boundary to OPERABLE status provided mitigating actions can ensure that the CRE remains within the licensing basis habitability limits for the occupants following an accident.

SR 3.7.9.4 (continued)

Compensatory measures are discussed in Regulatory Guide 1.196, Section C.2.7.3, (Ref. 3) which endorses, with exceptions, NEI 99-03, Section 8.4 and Appendix F (Ref. 4). These compensatory measures may also be used as mitigating actions as required by Required Action B.2. Temporary analytical methods may also be used as compensatory measures to restore OPERABILITY (Ref. 5). Options for restoring the CRE boundary to OPERABLE status include changing the licensing basis DBA consequence analysis, repairing the CRE boundary, or a combination of these actions. Depending upon the nature of the problem and the corrective action, a full scope leakage test may not be necessary to establish that the CRE boundary has been restored to OPERABLE status.

REFERENCES

1. SAR, Section 9.7.
 2. SAR, Chapter 14.
 3. Regulatory Guide 1.196.
 4. NEI 99-03, "Control Room Habitability Assessment," June 2001.
 5. Letter from Eric J. Leeds (NRC) to James W. Davis (NEI) dated January 30, 2004, "NEI Draft White Paper, Use of Generic Letter 91-18 Process and Alternative Source Terms in the Context of Control Room Habitability." (ADAMS Accession No. ML040300694)
 6. Standard Review Plan, Section 6.4, "Control Room Habitability System," Rev. 2, July 1981.
 7. BAW-2441-A, Revision 2, Risk Informed Justification for LCO End-State Changes, September 2006.
-

ACTIONS (continued)

B.1 (continued)

Preplanned measures should be available to address these concerns for intentional and unintentional entry into the Condition. The 24-hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of compensatory measures. The 24-hour Completion Time is a typically reasonable time to diagnose, plan and possible repair, and test most problems with the PRVS negative pressure boundary.

C.1 and C.2

If the Required Action and the associated Completion Time are not met, or with both PRVS trains inoperable, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.11.1

Standby systems should be checked periodically to ensure that they function properly. Since the environment and normal operating conditions on this system are not severe, testing each train once a month provides an adequate check on this system. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.7.11.2

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

SR 3.7.11.3

This SR verifies that each PRVS train starts and operates on an actual or simulated actuation signal. 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 Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

Enclosure, Attachment 2

CNRO2021-00019

Technical Specification Bases Page Markups (Information Only)

Arkansas Nuclear One – Unit 2

Technical Specification Bases Affected

TS Bases Number	Title	Number of Pages
3.7.6.1	Control Room Emergency Ventilation and Air Conditioning System	2
Total ANO-2 TS Bases Pages		2

PLANT SYSTEMS

BASES

3/4.7.6 CONTROL ROOM EMERGENCY VENTILATION (CREVS) AND AIR CONDITIONING SYSTEM (CREACS) (continued)

SURVEILLANCE REQUIREMENTS (continued)

SR 4.7.6.1.2.a

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not severe, testing each train on a monthly basis adequately checks this system by starting the system from the control room and initiating flow through the HEPA filters and charcoal adsorbers. The CREVS is designed without heaters and need only be operated at least 15 minutes to demonstrate the function of the system. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program and is based on the known reliability of the equipment and two train redundancy available.

SR 4.7.6.1.2.b

This SR verifies that upon injection of an actual or simulated control room high radiation test signal the Control Room automatically isolates within 10 seconds and the CREVS switches into a recirculation mode of operation with flow through the HEPA filters and charcoal adsorber banks. This SR excludes automatic valves that are locked, sealed, or otherwise secured in the actuated position. It 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 Surveillance Frequency is controlled under the Surveillance Frequency Control Program and is based on industry operating experience and is consistent with the typical refueling cycle.

SR 4.7.6.1.2.c

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

SR 4.7.6.1.2.d

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

The CRE is considered habitable when the radiological dose to CRE occupants calculated in the licensing basis analyses of DBA consequences is no more than 5 rem TEDE and the CRE occupants are protected from hazardous chemicals and smoke. This SR verifies that the

unfiltered air leakage into the CRE is no greater than the flow rate assumed in the licensing basis analyses of DBA consequences. When unfiltered air leakage is greater than the assumed flow rate, ACTION d must be entered. ACTION d allows time to restore the CRE boundary to OPERABLE status provided mitigating actions can ensure that the CRE remains within the licensing basis habitability limits for the occupants following an accident.

Enclosure, Attachment 2

CNRO2021-00019

Technical Specification Bases Page Markups (Information Only)

Grand Gulf Nuclear Station, Unit 1

Technical Specification Bases Affected

TS Bases Number	Title	Number of Pages
3.5.1	"Emergency Core Cooling Systems (ECCS) Operating"	1
3.5.2	"Reactor Pressure Vessel Water Inventory Control"	1
3.5.3	"Reactor Core Isolation Cooling (RCIC) System"	1
3.6.1.7	"Residual Heat Removal (RHR) Containment Spray System"	1
3.6.4.3	"Standby Gas Treatment (SGT) System"	1
3.7.1	"Standby Service Water (SSW) System and Ultimate Heat Sink (UHS)"	2
3.7.2	"High Pressure Core Spray (HPCS) Service Water System (SWS),"	1
3.7.3	"Control Room Fresh Air (CRFA) System"	1

Total GGNS TS Bases Pages 9

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.5.1.4 (continued)

The Frequency for this Surveillance is in accordance with the INSERVICE TESTING PROGRAM requirements.

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 the CST to the suppression pool. 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 affect 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 performed in LCO 3.3.5.1, "Emergency Core Cooling System (ECCS) Instrumentation," overlaps this Surveillance to provide complete testing of the assumed safety function.

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

This SR is modified by a Note that excludes vessel injection/spray during the Surveillance. Since all active components are testable and full flow can be demonstrated by recirculation through the test line, coolant injection into the RPV is not required during the Surveillance.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.5.2.7

Verifying that each valve credited for automatically isolating a penetration flow path actuates to the isolation position on an actual or simulated RPV water level isolation signal is required to prevent RPV water inventory from dropping below the TAF should an unexpected draining event occur. 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 affect 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 current 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 Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.5.2.8

The required ECCS subsystem is required to have a manual start capability. This Surveillance verifies that a manual initiation signal will cause the required LCPI subsystem or LCPS System to start and operate as designed, including pump startup and actuation of all automatic valves to their required positions. The HPCS system is verified to start manually from a standby configuration, and includes the ability to override the RPV Level 8 injection valve isolation.

The current Surveillance Frequency is based on the need to perform the 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 Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

This SR is modified by a Note that excludes vessel injection/spray during the Surveillance. Since all active components are testable and full flow can be demonstrated by recirculation through the test line, coolant injection into the RPV is not required during the Surveillance.

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.5.3.5 (continued)

automatic pump startup and actuation of all automatic valves to their required positions. This Surveillance test also ensures that the RCIC 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 the CST to the suppression pool. 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 affect 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 performed in LCO 3.3.5.2, "Reactor Core Isolation Cooling (RCIC) System Instrumentation," overlaps this Surveillance to provide complete testing of the assumed safety function.

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

This SR is modified by a Note that excludes vessel injection during the Surveillance. Since all active components are testable and full flow can be demonstrated by recirculation through the test line, coolant injection into the RPV is not required during the Surveillance.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 33.
 2. UFSAR, Section 5.4.6.2.
 3. Memorandum from R. L. Baer (NRC) to V. Stello, Jr. (NRC), "Recommended Interim Revisions to LCO's for ECCS Components," December 1, 1975.
-

BASES

SURVEILLANCE
REQUIREMENTS

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 Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.6.1.7.5

This surveillance is performed to verify the spray nozzles are not obstructed. This surveillance may be accomplished by verifying the nozzle openings are free of material that would obstruct the flow of water or the performance of an air flow test through each nozzle. The type of testing utilized should be based on system operating history and the availability of the appropriate testing equipment. UFSAR Section 6.2.2.2 (Reference 3) defines preoperational testing performed on the system, which is not required to be duplicated by the performance of this surveillance testing. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.6.4.3.2 (continued)

Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.6.4.3.3

The SR requires verification that each SGT subsystem starts upon receipt of an actual or simulated initiation signal. The SR excludes automatic dampers that are locked, sealed, or otherwise secured in the actuated position. The SR does not apply to dampers that are locked, sealed, or otherwise secured in the actuated position since the affected dampers were verified to be in the actuated position prior to being locked, sealed, or otherwise secured. Placing an automatic damper 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 damper to be repositioned to the non-actuated position to support the accident analysis. Restoration of an automatic damper to within its required Frequency. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.6.2.6 overlaps this SR to provide complete testing of the safety function. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 41.
 2. UFSAR, Section 6.5.3.
 3. NEDC-32988-A, Revision 2, Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants, December 2002.
-

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.7.1.3 (continued)

This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves.

Isolation of the SSW System to components or systems does not necessarily affect the OPERABILITY of the SSW subsystem. As such, when all SSW pumps, valves, and piping are OPERABLE, but a branch connection off the main header is isolated, the SSW subsystem needs to be evaluated to determine if it is still OPERABLE.

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

SR 3.7.1.4

This SR verifies that the automatic isolation valves of the SSW System will automatically switch to the safety or emergency position to provide cooling water exclusively to the safety related equipment during an accident event. This is demonstrated by use of an actual or simulated initiation signal. This SR also verifies the automatic start capability of the SSW pump and cooling tower fans in each subsystem. 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 3.3.5.1.6 overlaps this SR to provide complete testing of the safety function.

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

REFERENCES

1. Regulatory Guide 1.27, Revision 2, January 1976.
2. UFSAR, Section 9.2.1.
3. UFSAR, Table 9.2-3.
4. UFSAR, Section 6.2.1.1.3.3.

5. UFSAR, Chapter 15.
 6. UFSAR, Section 6.2.2.3.
 7. UFSAR, Table 6.2-2.
 8. NEDC-32988-A, Revision 2, Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants, December 2002.
-

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.7.2.1 (continued)

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.

Isolation of the HPCS SWS to components or systems may render those components or systems inoperable, but may not affect the OPERABILITY of the HPCS SWS. As such, when all HPCS SWS pumps, valves, and piping are OPERABLE, but a branch connection off the main header is isolated, the HPCS SWS needs to be evaluated to determine if it is still OPERABLE.

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

SR 3.7.2.2

This SR verifies that the automatic isolation valves of the HPCS SWS will automatically switch to the safety or emergency position to provide cooling water exclusively to the safety related equipment during an accident event. This is demonstrated by use of an actual or simulated initiation signal. **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.** This SR also verifies the automatic start capability of the HPCS SWS pump. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.5.1.6 overlaps this SR to provide complete testing of the safety function.

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

REFERENCES

1. UFSAR, Section 9.2.1.
 2. UFSAR, Chapter 6.
 3. UFSAR, Chapter 15.
-

BASES (continued)

SURVEILLANCE
REQUIREMENTS

SR 3.7.3.1

This SR verifies that a subsystem in a standby mode starts from the control room on demand and continues to operate. Standby systems should be checked periodically to ensure that they start and function properly. Operation for ≥ 15 continuous minutes demonstrates OPERABILITY of the system. Periodic operation ensures that blockages fan or motor failure, or excessive vibration can be detected for corrective action. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.7.3.2

This SR verifies that the required CRFA testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The VFTP includes testing HEPA filter performance, and minimum system flow rate. Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.7.3.3

This SR verifies that each CRFA subsystem starts and operates and that the isolation valves close in ≤ 4 seconds on an actual or simulated initiation signal. [The SR excludes automatic dampers and valves that are locked, sealed, or otherwise secured in the actuated position. The SR does not apply to dampers or valves that are locked, sealed, or otherwise secured. Placing an automatic valve or damper 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 or damper to be repositioned to the non-actuated position to support the accident analysis. Restoration of an automatic valve or damper to the non-actuated position requires verification that the SR has been met within its required Frequency.](#) The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.7.1.1 overlaps this SR to provide complete testing of the safety function. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.7.3.4

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

(continued)

Enclosure, Attachment 2

CNRO2021-00019

Technical Specification Bases Page Markups (Information Only)

River Bend Station, Unit 1

Technical Specification Bases Affected

TS Bases Number	Title	Number of Pages
3.5.1	"Emergency Core Cooling Systems (ECCS) Operating"	2
3.5.2	"Reactor Pressure Vessel Water Inventory Control"	1
3.5.3	"Reactor Core Isolation Cooling (RCIC) System"	2
3.6.4.3	"Standby Gas Treatment (SGT) System"	2
3.7.1	"Standby Service Water (SSW) System and Ultimate Heat Sink (UHS)"	1
3.7.2	"Control Room Fresh Air (CRFA) System"	2

Total RBS TS Bases Pages 10

BASES

SURVEILLANCE
REQUIREMENTSSR 3.5.1.4 (continued)

The pump flow rates are verified with a pump differential pressure that is sufficient to overcome 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. The Frequency for this Surveillance is in accordance with the Inservice Testing Program requirements.

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 in the flow path to their required positions. This test may be performed by means of any series of sequential, overlapping, or total system steps so that the entire system is tested. 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 the CST to the suppression pool. 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 performed in LCO 3.3.5.1, "Emergency Core Cooling System (ECCS) Instrumentation," overlaps this Surveillance to provide complete testing of the assumed safety function.

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

(continued)

No changes on this page.
For information only

BASES

SURVEILLANCE REQUIREMENTS

SR 3.5.1.5 (continued)

This SR is modified by a Note that excludes vessel injection/spray during the Surveillance. Since all active components are testable and full flow can be demonstrated by recirculation through the test line, coolant injection into the RPV is not required during the Surveillance.

SR 3.5.1.6

The ADS designated S/RVs are required to actuate automatically upon receipt of specific initiation signals. A system functional test is performed to demonstrate that the mechanical portions of the ADS function (i.e., solenoids) operate as designed when initiated either by an actual or simulated initiation signal, causing proper actuation of all the required components. SR 3.5.1.7 and the LOGIC SYSTEM FUNCTIONAL TEST performed in LCO 3.3.5.1 overlap this Surveillance to provide complete testing of the assumed safety function.

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

This SR is modified by a Note that excludes valve actuation. This prevents an RPV pressure blowdown.

SR 3.5.1.7

A manual actuation of each required ADS valve (those valves removed and replaced to satisfy SR 3.4.4.1) is performed to verify that the valve is functioning properly. This SR can be demonstrated by one of two methods. If performed by method 1), plant startup is allowed prior to performing this test because valve OPERABILITY and the setpoints for overpressure protection are verified, per ASME requirements (Ref. 16) 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 performed by method 2), valve

(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.5.2.5

Verifying that the required ECCS injection/spray subsystem can be manually aligned, and the pump started and operate for at least 10 minutes demonstrates that the subsystem is available to mitigate a draining event. This SR is modified by two Notes. Note 1 states that testing the ECCS injection/spray subsystem may be done through the test return line to avoid overfilling the refueling cavity. Note 2 states that credit for meeting the SR may be taken for normal system operation that satisfies the SR, such as using the RHR mode of LPCI for ≥ 10 minutes. The minimum operating time of 10 minutes was based on engineering judgment. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.5.2.6

Verifying that each valve credited for automatically isolating a penetration flow path actuates to the isolation position on an actual or simulated RPV water level isolation signal is required to prevent RPV water inventory from dropping below the TAF should an unexpected draining event occur. 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 Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.5.2.7

This Surveillance verifies that a required LPCI subsystem, LPCS System, or HPCS System can be manually aligned and started from the control room, including any necessary valve alignment, instrumentation, or controls, to transfer water from the suppression pool or CST to the RPV.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program

This SR is modified by a Note that excludes vessel injection/spray during the Surveillance. Since all active components are testable and full flow can be demonstrated by recirculation through the test line, coolant injection into the RPV is not required during the Surveillance.

continued

No changes on this page.
For information only

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

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. Since the required reactor steam pressure must be available to perform SR 3.5.3.3 and SR 3.5.3.4, 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.

The Surveillance Frequencies are controlled under the Surveillance Frequency Control Program.

SR 3.5.3.5

The RCIC System is required to actuate automatically to perform its design function. This Surveillance verifies that with a required system initiation signal (actual or simulated) the automatic initiation logic of RCIC will cause the system to operate as designed, including actuation of the system throughout its emergency operating sequence,

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.5.3.5 (continued)

automatic pump startup and actuation of all automatic valves to their required positions. This Surveillance test also ensures that the RCIC 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 the CST to the suppression pool. 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 performed in LCO 3.3.5.2, "Reactor Core Isolation Cooling (RCIC) System Instrumentation," overlaps this Surveillance to provide complete testing of the assumed safety function.

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

This SR is modified by a Note that excludes vessel injection during the Surveillance. Since all active components are testable and full flow can be demonstrated by recirculation through the test line, coolant injection into the RPV is not required during the Surveillance.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 33.
2. USAR, Section 5.4.6.2.
3. Memorandum from R.L. Baer (NRC) to V. Stello, Jr. (NRC), "Recommended Interim Revisions to LCO's for ECCS Components," December 1, 1975.
4. USAR, Section 5.4.6.1

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.3.1

Operating each SGT subsystem for ≥ 15 continuous minutes ensures that both subsystems are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.6.4.3.2

This SR verifies that the required SGT filter testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The SGT System filter tests are in accordance with Regulatory Guide 1.52 (Ref. 4). The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specified test frequencies and additional information are discussed in detail in the VFTP.

SR 3.6.4.3.3

This SR requires verification that each SGT subsystem starts upon receipt of an actual or simulated initiation signal. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.6.2.5 overlaps this SR to provide complete testing of the safety function. The SR excludes automatic dampers that are locked, sealed, or otherwise secured in the actuated position. The SR does not apply to dampers that are locked, sealed, or otherwise secured in the actuated position since the affected dampers were verified to be in the actuated position prior to being locked, sealed, or otherwise secured. Placing an automatic damper 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 damper to be repositioned to the non-actuated position to support the accident analysis. Restoration of an automatic damper to the non-actuated position requires verification that the SR has been met within its required Frequency. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.6.4.3.4

This SR requires verification that the SGT filter cooling bypass damper can be opened and the fan started. This ensures that the ventilation mode of SGT System operation is available. The SR excludes automatic dampers that are locked, sealed, or otherwise secured in the actuated position. The SR does not apply to dampers that are locked, sealed, or otherwise secured in the actuated position since the affected dampers were verified to be in the actuated position prior to being locked, sealed, or otherwise secured. Placing an automatic damper 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 damper to be repositioned to the non-actuated position to support the accident analysis. Restoration of an automatic damper to the non-actuated position requires verification that the SR has been met within its required Frequency. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.7.1.4 (continued)

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.

Isolation of the SSW subsystem to components or systems does not necessarily affect the OPERABILITY of the SSW System. As such, when all SSW pumps, valves, and piping are OPERABLE, but a branch connection off the main header is isolated, the SSW subsystem needs to be evaluated to determine if it is still OPERABLE.

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

SR 3.7.1.5

This SR verifies that the automatic isolation valves of the SSW System will automatically switch to the safety or emergency position to provide cooling water exclusively to the safety related equipment during an accident event. This is demonstrated by use of an actual or simulated initiation signal. This SR also verifies the automatic start capability of the SSW pump and cooling tower fans in each subsystem. Any series of sequential or overlapping steps which demonstrate the required function may be used to satisfy this requirement. 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 Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

REFERENCES

1. Regulatory Guide 1.27, Revision 2, January 1976.
2. USAR, Section 9.2.
3. USAR, Table 9.2-15.
4. USAR, Section 6.2.1.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)SR 3.7.2.2

This SR verifies that the required CRFA testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The CRFA filter tests are in accordance with Regulatory Guide 1.52 (Ref. 5). The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test Frequencies and additional information are discussed in detail in the VFTP.

SR 3.7.2.3

This SR verifies that each CRFA subsystem starts and operates on an actual or simulated initiation signal. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.7.1.5 overlaps this SR to provide complete testing of the safety function. The SR excludes automatic dampers and valves that are locked, sealed, or otherwise secured in the actuated position. The SR does not apply to dampers or valves that are locked, sealed, or otherwise secured in the actuated position since the affected dampers or valves were verified to be in the actuated position prior to being locked, sealed, or otherwise secured. Placing an automatic valve or damper 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 or damper to be repositioned to the non-actuated position to support the accident analysis. Restoration of an automatic valve or damper to the non-actuated position requires verification that the SR has been met within its required Frequency. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.7.2.4

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

The CRE is considered habitable when the radiological dose to CRE occupants calculated in the licensing basis analyses of DBA consequences is no more than 5 rem TEDE and the CRE occupants are protected from hazardous chemicals and smoke. This SR verifies that the unfiltered air leakage into the CRE is no greater than the flow rate assumed in the licensing basis analyses of DBA consequences. When unfiltered air leakage is greater than the assumed flow rate, Condition B must be entered. Required Action B.3 allows time to restore the CRE boundary to OPERABLE status provided mitigating actions can ensure that the CRE remains within the licensing basis habitability limits for the occupants following an accident. Compensatory measures are discussed in Regulatory Guide 1.196, Section C.2.7.3, (Ref. 7) which endorses, with exceptions, NEI 99-03, Section 8.4 and Appendix F (Ref. 8). These

compensatory measures may also be used as mitigating actions as required by Required Action B.2. Temporary analytical methods may also be used as compensatory measures to restore OPERABILITY (Ref. 9). Options for restoring the CRE boundary to OPERABLE status include changing the licensing basis DBA consequence analysis, repairing the CRE boundary, or a combination of these actions. Depending upon the nature of the problem and the corrective action, a full scope inleakage test may not be necessary to establish that the CRE boundary has been restored to OPERABLE status.

(continued)

RIVER BEND

B 3.7-15

Amendment No. 496,

Enclosure, Attachment 2

CNRO2021-00019

Technical Specification Bases Page Markups (Information Only)

Waterford Steam Electric Station, Unit 3

Technical Specification Bases Affected

TS Bases Number	Title	Number of Pages
3.6.6.1	"Shield Building Ventilation System."	1
3.7.7	"Controlled Ventilation Area System."	1
Total Waterford-3 TS Bases Pages		2

3/4.6.6 SECONDARY CONTAINMENT

3/4.6.6.1 SHIELD BUILDING VENTILATION SYSTEM

→ (DRN 05-131, Ch. 39)

The OPERABILITY of the shield building ventilation systems ensures that containment vessel leakage occurring during design basis accidents into the annulus will be filtered through the HEPA filters and charcoal adsorber trains prior to discharge to the atmosphere. This requirement is necessary to meet the assumptions used in the safety analyses and limit the site boundary radiation doses to within the limits of 10 CFR 50.67.

← (DRN 05-131, Ch. 39)

Acceptable removal efficiency is shown by a methyl iodide penetration of less than 0.5% when tests are performed in accordance with ASTM D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon," at a temperature of 30°C and a relative humidity of 70%. The penetration acceptance criterion is determined by the following equation:

$$\text{Allowable Penetration} = \frac{[100\% - \text{methyl iodide efficiency for charcoal credited in accident analysis}]}{\text{safety factor of 2}}$$

Applying a safety factor of 2 is acceptable because ASTM D3803-1989 is a more accurate and demanding test than older tests.

Operation of the system with the heaters on for at least 10 hours continuous over a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. Obtaining and analyzing charcoal samples after 720 hours of adsorber operation (since the last sample and analysis) ensures that the adsorber maintains the efficiency assumed in the safety analyses and is consistent with Regulatory Guide 1.52 and ASTM D3803-1989.

→ (LBDCR 16-046, Ch. 86)

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

← (LBDCR 16-046, Ch. 86)

SRs 4.6.6.1.d.2 and 4.6.6.1.d.3 exclude automatic dampers and/or valves that are locked, sealed, or otherwise secured in the actuated position. The SRs do not apply to dampers or valves that are locked, sealed, or otherwise secured in the actuated position since the affected dampers or valves were verified to be in the actuated position prior to being locked, sealed, or otherwise secured. Placing an automatic valve or damper 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 or damper to be repositioned to the non-actuated position to support the accident analysis. Restoration of an automatic valve or damper to the non-actuated position requires verification that the SR has been met within its required Frequency.

3/4.6.6.2 SHIELD BUILDING INTEGRITY

→ (DRN 05-131, Ch. 39)

SHIELD BUILDING INTEGRITY ensures that the release of radioactive materials from the primary containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the safety analyses. This restriction, in conjunction with operation of the shield building ventilation system, will limit the site boundary radiation doses to within the limits of 10 CFR 50.67 during accident conditions.

← (DRN 05-131, Ch. 39)

→ (LBDCR 16-046, Ch. 86)

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

← (LBDCR 16-046, Ch. 86)

PLANT SYSTEMS

BASES

3/4.7.7 CONTROLLED VENTILATION AREA SYSTEM (Continued)

Acceptable removal efficiency is shown by a methyl iodide penetration of less than 0.5% when tests are performed in accordance with ASTM D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon," at a temperature of 30°C and a relative humidity of 70%. The penetration acceptance criterion is determined by the following equation:

$$\text{Allowable Penetration} = \frac{[100\% - \text{methyl iodide efficiency for charcoal credited in accident analysis}]}{\text{safety factor of 2}}$$

Applying a safety factor of 2 is acceptable because ASTM D3803-1989 is a more accurate and demanding test than older tests.

→(LBDCR 16-046, Ch. 86)

Operation of the system with the heaters on for at least 10 hours continuous in accordance with the Surveillance Frequency Control Program is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. Obtaining and analyzing charcoal samples after 720 hours of adsorber operation (since the last sample and analysis) ensures that the adsorber maintains the efficiency assumed in the safety analyses and is consistent with Regulatory Guide 1.52 and ASTM D3803-1989.

The Surveillance Frequencies are controlled under the Surveillance Frequency Control Program.

←(LBDCR 16-046, Ch. 86)

SRs 4.7.7.d.2 and 4.7.7.d.3 exclude automatic dampers and/or valves that are locked, sealed, or otherwise secured in the actuated position. The SRs do not apply to dampers or valves that are locked, sealed, or otherwise secured in the actuated position since the affected dampers or valves were verified to be in the actuated position prior to being locked, sealed, or otherwise secured. Placing an automatic valve or damper 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 or damper to be repositioned to the non-actuated position to support the accident analysis. Restoration of an automatic valve or damper to the non-actuated position requires verification that the SR has been met within its required Frequency.

Enclosure, Attachment 3

CNRO2021-00019

Retyped Technical Specification Pages

**ANO-1
ANO-2
GGNS
RBS
Waterford-3**

Plant Affected	Number of TS Pages
Arkansas Nuclear One – Unit 1	2
Arkansas Nuclear One – Unit 2	1
Grand Gulf Nuclear Station, Unit 1	8
River Bend Station, Unit 1	6
Waterford Steam Electric Station, Unit 3	2

Total Number of Pages in Attachment 3

19

Enclosure, Attachment 3

CNRO2021-00019

Retyped Technical Specification Pages

Arkansas Nuclear One – Unit 1

Technical Specification Affected

TS Number	Title	Number of Pages
3.7.9	Control Room Emergency Ventilation System (CREVS)	1
3.7.11	Penetration Room Ventilation System (PRVS)	1
Total ANO-1 TS Pages		2

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.9.1	Operate each CREVS train for ≥ 15 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.7.9.2	Perform required CREVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.9.3	Verify the CREVS automatically isolates the Control Room and switches into a recirculation mode of operation on an actual or simulated actuation signal, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.9.4	Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program.	In accordance with the Control Room Envelope Habitability Program.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Operate each PRVS train for ≥ 15 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.7.11.2	Perform required PRVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.11.3	Verify each PRVS train actuates on an actual or simulated actuation signal, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.	In accordance with the Surveillance Frequency Control Program

Enclosure, Attachment 3

CNRO2021-00019

Retyped Technical Specification Pages

Arkansas Nuclear One – Unit 2

Technical Specification Affected

TS Number	Title	Number of Pages
3.7.6.1	Control Room Emergency Ventilation and Air Conditioning System	1
Total ANO-2 TS Pages		<u>1</u>

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS

- 4.7.6.1.1 Each control room emergency air conditioning system shall be demonstrated OPERABLE:
- a. In accordance with the Surveillance Frequency Control Program by:
 1. Starting each unit from the control room, and
 2. Verifying that each unit operates for at least 1 hour and maintains the control room air temperature ≤ 84 °F D.B.
 - b. In accordance with the Surveillance Frequency Control Program by verifying a system flow rate of 9900 cfm \pm 10%.
- 4.7.6.1.2 Each control room emergency air filtration system shall be demonstrated OPERABLE:
- a. In accordance with the Surveillance Frequency Control Program by verifying that the system operates for at least 15 minutes.
 - b. In accordance with the Surveillance Frequency Control Program by verifying that on a control room high radiation signal, either actual or simulated, the system automatically isolates the control room and switches into a recirculation mode of operation, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.
 - c. By performing the required Control Room Emergency Ventilation filter testing in accordance with the Ventilation Filter Testing Program (VFTP).
 - d. Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program.

Enclosure, Attachment 3

CNRO2021-00019

Retyped Technical Specification Pages

Grand Gulf Nuclear Station, Unit 1

Technical Specification Affected

TS Number	Title	Number of Pages
3.5.1	"Emergency Core Cooling Systems (ECCS) Operating"	1
3.5.2	"Reactor Pressure Vessel Water Inventory Control"	1
3.5.3	"Reactor Core Isolation Cooling (RCIC) System"	1
3.6.1.7	"Residual Heat Removal (RHR) Containment Spray System"	1
3.6.4.3	"Standby Gas Treatment (SGT) System"	1
3.7.1	"Standby Service Water (SSW) System and Ultimate Heat Sink (UHS)"	1
3.7.2	"High Pressure Core Spray (HPCS) Service Water System (SWS),"	1
3.7.3	"Control Room Fresh Air (CRFA) System"	1

Total GGNS TS Pages 8

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.5 -	<p>-----NOTE----- Vessel injection/spray may be excluded. -----</p> <p>Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal, except for valves that are locked, sealed, or otherwise secured in the actuated position.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.6	<p>-----NOTE----- Valve actuation may be excluded. -----</p> <p>Verify the ADS actuates on an actual or simulated automatic initiation signal.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.7	<p>-----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -----</p> <p>Verify each ADS valve relief-mode actuator strokes when manually actuated.</p>	In accordance with the INSERVICE TESTING PROGRAM on a STAGGERED TEST BASIS for each valve solenoid

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.6	Operate the required ECCS injection/spray subsystem through the test return line for ≥ 10 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.7	Verify each valve credited for automatically isolating a penetration flow path actuates to the isolation position on an actual or simulated isolation signal, except for valves that are locked, sealed, or otherwise secured in the actuated position.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.8	<p>-----NOTE----- Vessel injection/spray may be excluded. -----</p> <p>Verify the required LPCI or LPCS subsystem actuates on a manual initiation signal, or the required HPCS System can be manually operated.</p>	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.5.3.5</p> <p>-----NOTE----- Vessel injection may be excluded. -----</p> <p>Verify the RCIC System actuates on an actual or simulated automatic initiation signal, except for valves that are locked, sealed, or otherwise secured in the actuated position.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.7.1</p> <p>-----NOTE-----</p> <ol style="list-style-type: none"> 1. RHR containment spray subsystems may be considered OPERABLE during alignment and operation for decay heat removal when below the RHR cut in permissive pressure in MODE 3 if capable of being manually realigned and not otherwise inoperable. 2. Not required to be met for system vent flow paths opened under administrative control. <p>-----</p> <p>Verify each RHR containment 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.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.1.7.2</p> <p>Verify RHR containment spray subsystem locations susceptible to gas accumulation are sufficiently filled with water.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.1.7.3</p> <p>Verify each RHR pump develops a flow rate of ≥ 7450 gpm on recirculation flow through the associated heat exchanger to the suppression pool.</p>	<p>In accordance with the INSERVICE TESTING PROGRAM</p>
<p>SR 3.6.1.7.4</p> <p>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.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.3.1	Operate each SGT subsystem for ≥ 15 continuous minutes with heaters operating.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.3.2	Perform required SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.3.3	Verify each SGT subsystem actuates on an actual or simulated initiation signal, except for dampers that are locked, sealed, or otherwise secured in the open position.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.1.3	Verify each required SSW subsystem manual, power operated, and automatic valve in the flow path servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.1.4	Verify each SSW subsystem actuates on an actual or simulated Initiation signal, except for valves that are locked, sealed, or otherwise secured in the actuated position.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.2 High Pressure Core Spray (HPCS) Service Water System (SWS)

LCO 3.7.2 The HPCS SWS shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. HPCS SWS inoperable.	A.1 Declare HPCS System inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	Verify each required HPCS SWS manual, power operated, and automatic valve in the flow path servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.2.2	Verify the HPCS SWS actuates on an actual or simulated initiation signal, except for valves that are locked, sealed, or otherwise secured in the actuated position.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.3.3	Verify each CRFA subsystem actuates on an actual or simulated initiation signal, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.3.4	Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program.	In accordance with the Control Room Envelope Habitability Program

Enclosure, Attachment 3

CNRO2021-00019

Retyped Technical Specification Pages

River Bend Station, Unit 1

Technical Specification Affected

TS Number	Title	Number of Pages
3.5.1	"Emergency Core Cooling Systems (ECCS) Operating"	1
3.5.2	"Reactor Pressure Vessel Water Inventory Control"	1
3.5.3	"Reactor Core Isolation Cooling (RCIC) System"	1
3.6.4.3	"Standby Gas Treatment (SGT) System"	1
3.7.1	"Standby Service Water (SSW) System and Ultimate Heat Sink (UHS)"	1
3.7.2	"Control Room Fresh Air (CRFA) System"	1

Total RBS TS Pages 6

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.5	<p>-----NOTE----- Vessel injection/spray may be excluded. -----</p> <p>Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal, except for valves that are locked, sealed, or otherwise secured in the actuated position.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.6	<p>-----NOTE----- Valve actuation may be excluded. -----</p> <p>Verify the ADS actuates on an actual or simulated automatic initiation signal.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.7	<p>-----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -----</p> <p>Verify each ADS valve relief mode actuator strokes when manually actuated.</p>	In accordance with the Inservice Testing Program on a STAGGERED TEST BASIS for each valve solenoid

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.5.2.5</p> <p>-----NOTES-----</p> <p>1. Operation may be through the test return line. 2. Credit may be taken for normal system operation to satisfy this SR.</p> <p>-----</p> <p>Operate the required ECCS injection/spray subsystem for ≥ 10 minutes.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.5.2.6</p> <p>Verify each valve credited for automatically isolating a penetration flow path actuates to the isolation position on an actual or simulated actuation signal, except for valves that are locked, sealed, or otherwise secured in the actuated position.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.5.2.7</p> <p>-----NOTE-----</p> <p>Vessel injection/spray may be excluded.</p> <p>-----</p> <p>Verify the required ECCS injection/spray subsystem can be manually operated.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.3.5	<p>-----NOTE----- Vessel injection may be excluded. -----</p> <p>Verify the RCIC System actuates on an actual or simulated automatic initiation signal, except for valves that are locked, sealed, or otherwise secured in the actuated position.</p>	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.3.1	Operate each SGT subsystem for ≥ 15 continuous minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.3.2	Perform required SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.3.3	Verify each SGT subsystem actuates on an actual or simulated initiation signal, except for dampers that are locked, sealed, or otherwise secured in the actuated position.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.3.4	Verify each SGT filter cooling bypass damper can be opened and the fan started, except for dampers that are locked, sealed, or otherwise secured in the actuated position.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.1.3	Operate each cooling tower fan cell for ≥ 15 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.7.1.4	Verify each required SSW subsystem manual, power operated, and automatic valve in the flow path servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.1.5	Verify each SSW subsystem actuates on an actual or simulated initiation signal, except for valves that are locked, sealed, or otherwise secured in the actuated position.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>F. Two CRFA subsystems inoperable during movement of recently irradiated fuel assemblies in the primary containment or fuel building.</p> <p><u>OR</u></p> <p>One or more CRFA subsystems inoperable due to inoperable CRE boundary during movement of recently irradiated fuel assemblies in the primary containment or fuel building.</p>	<p>F.1 Suspend movement of recently irradiated fuel assemblies in the primary containment and fuel building.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	Operate each CRFA subsystem for ≥ 15 continuous minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.7.2.2	Perform required CRFA filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.2.3	Verify each CRFA subsystem actuates on an actual or simulated initiation signal, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.	In accordance with the Surveillance Frequency Control Program

(continued)

Enclosure, Attachment 3

CNRO2021-00019

Retyped Technical Specification Pages

Waterford Steam Electric Station, Unit 3

Technical Specification Affected

TS Number	Title	Number of Pages
3.6.6.1	"Shield Building Ventilation System."	1
3.7.7	"Controlled Ventilation Area System."	1
Total Waterford-3 TS Pages		2

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

1. Verifying that the ventilation system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 10,000 cfm \pm 10%.
 2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 0.5% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity of 70%.
 3. Verifying a system flow rate of 10,000 cfm \pm 10% during system operation when tested in accordance with ANSI N510-1975.
- c. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 0.5% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity of 70%.
- d. In accordance with the Surveillance Frequency Control Program by:
1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 7.8 inches water gauge while operating the system at a flow rate of 10,000 cfm \pm 10%.
 2. Verifying that the system starts on a safety injection actuation test signal, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.
 3. Verifying that the filter cooling bypass valves can be opened, except for valves that are locked, sealed, or otherwise secured in the open position.
 4. Verifying that each system produces a negative pressure of greater than or equal to 0.25 inch water gauge in the annulus within 1 minute after a start signal.
 5. Verifying that the heaters dissipate 60 \pm 6.0, -6.0 kW when tested in accordance with ANSI N510-1975.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 0.5% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity of 70%.
- d. In accordance with the Surveillance Frequency Control Program by:
 - 1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 7.8 inches water gauge while operating the system at a flow rate of 3000 cfm \pm 10%.
 - 2. Verifying that the system starts on a Safety Injection Actuation Test Signal and achieves and maintains a negative pressure of \geq 0.25 inch water gauge within 45 seconds, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.
 - 3. Verifying that the filter cooling bypass valves can be opened, except for valves that are locked, sealed, or otherwise secured in the open position.
 - 4. Verifying that the heaters dissipate 20 + 2.0, -2.0 kW when tested in accordance with ANSI N510-1975.
- e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99.95% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 3000 cfm \pm 10%.
- f. After each complete or partial replacement of a charcoal absorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99.95% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 3000 cfm \pm 10%.