Advanced Passive 1000 (AP1000)
Generic Technical Specification Traveler (GTST)

Title: Changes Related to LCO 3.7.7, Startup Feedwater Isolation and Control Valves

I. Technical Specifications Task Force (TSTF) Travelers, Approved Since Revision 2 of STS NUREG-1431, and Used to Develop this GTST

TSTF Number and Title:

TSTF-440-A, Rev 0, Eliminate Bases Requirement for Performing a System Walkdown

STS NUREGs Affected:

TSTF-440-A, Rev 0: NUREGs 1430, 1431, and 1432

NRC Approval Date:

TSTF-440-A, Rev 0: 11-Oct-02

TSTF Classification:

TSTF-440-A, Rev 0: Bases Only Change

II. Reference Combined License (RCOL) Standard Departures (Std. Dep.), RCOL COL Items, and RCOL Plant-Specific Technical Specifications (PTS) Changes Used to Develop this GTST

RCOL Std. Dep. Number and Title:

There are no Vogtle departures applicable to Specification 3.7.7.

RCOL COL Item Number and Title:

There are no Vogtle COL items applicable to Specification 3.7.7.

RCOL PTS Change Number and Title:

VEGP LAR DOC A003:	References to various Chapters and Sections of the Final Safety Analysis Report (FSAR) are revised to include FSAR.
VEGP LAR DOC A100:	TS 3.7.7 Specification revision
VEGP LAR DOC A101:	Editorial revision to TS 3.7.7 Required Actions A.1 and A.2
VEGP LAR DOC A102:	Deletion of TS 3.7.7 Required Action C.3
VEGP LAR DOC M11:	Containment valve isolation revisions to TS 3.7.7
VEGP LAR DOC M15:	Applicability revision to TS 3.7.7
VEGP LAR DOC L01:	TS Definition for Actuation Device Test is deleted

III. Comments on Relations Among TSTFs, RCOL Std. Dep., RCOL COL Items, and RCOL PTS Changes

This section discusses the considered changes that are: (1) applicable to operating reactor designs, but not to the AP1000 design; (2) already incorporated in the GTS; or (3) superseded by another change.

None

IV. Additional Changes Proposed as Part of this GTST (modifications proposed by NRC staff and/or clear editorial changes or deviations identified by preparer of GTST)

Revise the first three paragraphs of the "ASA" section of the Bases to state (NRC Staff Comment):

> The basis for the requirement to isolate the startup feedwater system is established by the analysis for large ~~Steam Line Break (~~SLB~~)~~ inside containment. It is also based on the **analyses** ~~analysis~~ for a large ~~Feedline Break (~~FLB~~)~~ **inside containment** and **an SGTR**~~a steam generator tube rupture~~."
>
> ". . . Failure to isolate the startup feedwater following ~~a steam generator tube rupture~~**an SGTR** may result in overfilling the steam generator."
>
> "~~Low T_{cold} or high steam generator level~~ **The following ESFAS** signals **automatically** close the startup feedwater control and isolation valves and ~~trips~~**trip** the startup feedwater pumps**:**~~.~~
>
> - **RCS Cold Leg Temperature (T_{cold}) - Low (Table 3.3.8-1 Function 11)**
> - **SG Narrow Range Water Level - High (Table 3.3.8-1 Function 22) coincident with reactor trip (P-4) (LCO 3.3.12)**
> - **SG Narrow Range Water Level - High 2 (Table 3.3.8-1 Function 23)**

Revise the first paragraph of the "Applicability" section of the Bases to state (NRC Staff Comment):

> The startup feedwater isolation and control valves must be OPERABLE whenever there is significant mass and energy in the Reactor Coolant System and the steam generators. In MODES 1, 2, 3 and 4, **where a DBA could cause a release of radioactive material to containment,** the startup feedwater isolation and control valves are required to be OPERABLE in order to limit the amount of mass and energy that could be added to containment in the event of ~~a~~**an** SLB or FLB**, and to** ~~and~~ prevent steam generator overfill in the event of an SGTR ~~**and where a DBA could cause a release of radioactive material to containment**~~. ~~When the valves are closed, they are already performing their safety function.~~

APOG Recommended Changes to Improve the Bases

Revise the second paragraph of the "Background" section of the Bases to state:

> The startup feedwater system serves no safety related function and has no safety related design basis, except to isolate feedwater in the event of a **Feedline Break (FLB)**~~feedwater~~, **Steam Line Break (SLB)**~~steam line break~~, a steam generator tube rupture **(SGTR),** or other secondary side event.

Revise the first paragraph of the "ASA" section of the Bases to state:

> The basis for the requirement to isolate the startup feedwater system is established by the analysis for large ~~Steam Line Break (~~SLB~~)~~ inside containment.

It is also based on the analysis for a large ~~Feedline Break (~~FLB~~)~~ and a steam generator tube rupture.

These non-technical changes provide improved clarity, consistency, and operator usability.

Revise the third paragraph of the “Actions” section of the Bases under the heading “A.1 and A.2” to state:

For flow paths isolated in accordance with Required Action ~~A.2.1~~**A.1**, the affected flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure that flow paths required to be isolated following an accident will be in the isolation position should an event occur. This Required Action does not require any testing or device manipulation. Rather, it involves verification~~, through a system walkdown,~~ that the isolation devices are in the correct position. The Completion Time of “once per 7 days” is appropriate considering the fact that the devices are operated under administrative controls, valve status indications in the main control room and the probability of their misalignment is low.

This non-technical change provides improved clarity, consistency, and operator usability and implements TSTF-440-A.

Throughout the Bases, references to Sections and Chapters of the FSAR do not include the “FSAR” clarifier. Since these Section and Chapter references are to an external document, it is appropriate to include the “FSAR” modifier. (DOC A003)

V. Applicability

Affected Generic Technical Specifications and Bases:

Section 3.7.7, Startup Feedwater Isolation and Control Valves

Changes to the Generic Technical Specifications and Bases:

The GTS 3.7.7 LCO Specification is revised to provide clarification of LCO coverage. (DOC A100)

The GTS 3.7.7 Applicability statement is revised to remove an exception. (DOC M11 and DOC M15)

GTS 3.7.7 Required Actions A.1 and A.2 are revised to remove “(s).” This is consistent with TS writer's guide (Reference 4). (DOC A101)

GTS 3.7.7 Required Action C.3 is deleted and replaced with STS 3.7.7 Required Action C.3 “Be in MODE 5.” This eliminates a redundant phrase; is consistent with TS 3.6.3; and provides an exit path from the LCO condition. (DOC A102, DOC M11, and DOC M15)

The GTS SR 3.7.7.1 description is revised. Editorial changes are provided for clarification. (DOC A100)

STS SR 3.7.7.2 is added. This provides administrative support of SRs added by DOC L01 and is consistent with GTS 3.6.3. (DOC M11 and DOC L01)

The second paragraph of the “Background” section of the Bases is revised to improve clarity, consistency, and operator usability. (APOG Comment and NRC Edit)

The first three paragraphs of the “ASA” section of the Bases are revised to improve clarity, consistency, and operator usability. (APOG Comment and NRC Staff Comment)

The first paragraph of the “Applicability” section of the Bases is revised to improve clarity, consistency, and operator usability. (NRC Staff Comment)

The third paragraph of the “Actions” section of the Bases under the heading “A.1 and A.2” is revised to improve clarity, consistency, and operator usability. (TSTF-440-A, APOG Comment, and NRC Edit)

The acronym “FSAR” is added to modify “Section” and “Chapter” in references to the FSAR throughout the Bases. (DOC A003) (APOG Comment)

VI. Traveler Information

Description of TSTF changes:

TSTF-440-A deletes the words “through a system walkdown” from the Bases of Specifications 3.6.3, 3.6.6, and 3.6.7. This phrase also appears in the TS 3.7.6 “Actions” section of the Bases under the heading “A.1 and A.2.” The TSTF is appropriately applied to the Bases discussion of this TS.

Rationale for TSTF changes:

Specifying in the Bases that a system walkdown must be performed to meet these requirements is inconsistent with the remainder of the Specifications and would require a walkdown to verify the position of a valve indicated in the Control Room.

Description of changes in RCOL Std. Dep., RCOL COL Item(s), and RCOL PTS Changes:

DOC A100 revises the GTS 3.7.7 LCO statement to “Each Startup Feedwater Isolation Valve and Control Valve shall be OPERABLE.” In addition, GTS SR 3.7.7.1 is revised from “Verify both startup feedwater isolation and control valves are OPERABLE,” to “Verify each startup feedwater isolation and control valve is OPERABLE.”

DOC A101 revises GTS 3.7.7 Required Action A.1 and Required Action A.2 to delete the “(s)” in the word path.

DOC A102 deletes GTS 3.7.7 Required Action C.3.

DOC M11 revises the GTS 3.7.7 Applicability from “MODES 1, 2, 3, and 4 except when the startup feedwater flow paths are isolated,” to STS 3.7.7 Applicability, “MODES 1, 2, 3, and 4. GTS 3.7.7 Required Action C.3 is revised from “Isolate the affected flow path(s),” to STS 3.7.7 Required Action C.3, “Be in MODE 5.” A new SR 3.7.7.2 is added.

DOC M15 complements the Applicability change noted by DOC M11. A new Required Action C.3 is added stating: “Be in MODE 5” in 36 hours.

DOC L01 adds STS SR 3.7.7.2.

A more detailed description of each DOC can be found in Reference 2, VEGP TSU LAR Enclosure 1, and the NRC staff safety evaluation can be found in Reference 3, VEGP LAR SER. The VEGP TSU LAR was modified in response to NRC staff RAIs in Reference 5 and the Southern Nuclear Operating Company RAI Response in Reference 6.

Rationale for changes in RCOL Std. Dep., RCOL COL Item(s), and RCOL PTS Changes:

Editorial changes per DOC A100 and DOC A101 are consistent with the guidance provided in the Writer's Guide (reference 4).

DOC A102 notes that GTS 3.7.7 Required Action C.3 is redundant to GTS 3.7.7 Required Actions A.1 and B.1.

DOC M11 provides closed system containment isolation valve requirements that are either consistent with or more restrictive than those in GTS 3.6.3.

DOC M15 removes the exception statement from the LCO Applicability. When the unit is in MODE 1, 2, 3, or 4, GTS 3.7.7 currently does not apply to the valves whose flow path is isolated by a closed and deactivated valve. Thus, when a startup feedwater control valve is inoperable in Mode 1, 2, 3, or 4, once the affected flow path is isolated as required by GTS 3.7.7 Required Action A.1 or B.1, GTS 3.7.7 would not apply and the periodic verification of Required Actions A.2 would not be required.

GTS SR 3.3.2.7 (“Perform ACTUATION DEVICE TEST”) and SR 3.3.2.8 (“Perform ACTUATION DEVICE TEST for squib valves”) are deleted from GTS 3.3.2 and Table 3.3.2-1, Function 26.a, ESF Actuation Subsystem per DOC L01. The equivalent requirement (using phrasing generally consistent with NUREG-1431) must be included in individual Specifications for the actuated devices with the same 24 month Frequency as the deleted SRs. Therefore, device-specific SRs such as STS SR 3.7.7.2 must be added.

Description of additional changes proposed by NRC staff/preparer of GTST:

The second paragraph of the “Background” section of the Bases is revised to state (APOG Comment and NRC Edit):

> The startup feedwater system serves no safety related function and has no safety related design basis, except to isolate feedwater in the event of a **Feedline Break (FLB)**~~feedwater~~, **Steam Line Break (SLB**)~~steam line break~~, a **S**~~s~~team **G**~~g~~enerator **T**~~t~~ube **R**~~r~~upture **(SGTR),** or other secondary side event.

The first three paragraphs of the “ASA” section of the Bases are revised to state (APOG Comment and NRC Staff Comment):

> The basis for the requirement to isolate the startup feedwater system is established by the analysis for large ~~Steam Line Break (~~SLB~~)~~ inside containment. It is also based on the **analyses** ~~analysis~~ for a large ~~Feedline Break (~~FLB~~)~~ **inside containment** and **an SGTR**~~a steam generator tube rupture~~.
>
> . . . Failure to isolate the startup feedwater following ~~a steam generator tube rupture~~**an SGTR** may result in overfilling the steam generator.
>
> ~~Low T_{cold} or high steam generator level~~ **The following ESFAS** signals **automatically** close the startup feedwater control and isolation valves and ~~trips~~**trip** the startup feedwater pumps~~:~~.
>
> - **RCS Cold Leg Temperature (T_{cold}) - Low (Table 3.3.8-1 Function 11)**

- **SG Narrow Range Water Level - High (Table 3.3.8-1 Function 22)coincident with reactor trip (P-4) (LCO 3.3.12)**

- **SG Narrow Range Water Level - High 2 (Table 3.3.8-1 Function 23)**

The first paragraph of the “Applicability” section of the Bases is revised to state (NRC Staff Comment):

> The startup feedwater isolation and control valves must be OPERABLE whenever there is significant mass and energy in the Reactor Coolant System and the steam generators. In MODES 1, 2, 3 and 4, **where a DBA could cause a release of radioactive material to containment,** the startup feedwater isolation and control valves are required to be OPERABLE in order to limit the amount of mass and energy that could be added to containment in the event of ~~a~~**an** SLB or FLB**, and to** ~~and~~ prevent steam generator overfill in the event of an SGTR ~~**and where a DBA could cause a release of radioactive material to containment**~~. ~~When the valves are closed, they are already performing their safety function.~~

The third paragraph of the “Actions” section of the Bases under the heading “A.1 and A.2” is revised to state (APOG Comment and NRC Staff Edit):

> For flow paths isolated in accordance with Required Action ~~A.2.1~~**A.1**, the affected flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure that flow paths required to be isolated following an accident will be in the isolation position should an event occur. ~~This~~ Required Action **A.2** does not require any testing or device manipulation. Rather, it involves verification~~,~~ ~~through a system walkdown,~~ that the isolation devices are in the correct position. The **periodic** Completion Time of “once per 7 days” is appropriate considering ~~the fact~~ that the devices are operated under administrative controls, valve status indication~~s~~ **is provided** in the main control room and the probability of ~~their~~**valve** misalignment is low.

The acronym “FSAR” is added to modify “Section” and “Chapter” in references to the FSAR throughout the Bases. (DOC A003) (APOG Comment)

Rationale for additional changes proposed by NRC staff/preparer of GTST:

The non-technical change to the “Background” section of the Bases provides improved clarity, consistency, and operator usability.

The non-technical change to the “ASA” section of the Bases provides improved clarity, consistency, and operator usability.

The non-technical change to the “Applicability” section of the Bases provides improved clarity, consistency, and operator usability.

The non-technical change to the “Actions” section of the Bases implements TSTF-440-A and provides improved clarity, consistency, and operator usability.

Since Bases references to FSAR Sections and Chapters are to an external document, it is appropriate to include the “FSAR” modifier.

VII. GTST Safety Evaluation

Technical Analysis:

DOC A102 deletes GTS 3.7.7 Required Action C.3. GTS 3.7.7 Required Action C.3 is redundant to GTS 3.7.7 Required Actions A.1 and B.1. Under circumstances where GTS 3.7.7 Condition C applies, GTS 3.7.7 Conditions A and/or B continue to apply, and their respective Required Actions continue to be required. Since GTS 3.7.7 Required Actions A.1 and B.1 require the affected flow path to be isolated, there is no need to repeat this Required Action in GTS 3.7.7 Required Action C.3. Once the flow path is isolated as required by GTS 3.7.7 Required Actions A.1 and/or B.1, Condition C would no longer apply and can be exited. Therefore, the GTS 3.7.7 Required Action C.3 can be deleted with no resultant technical change.

DOC M11 and DOC M15 revise the GTS 3.7.7 Applicability from “MODES 1, 2, 3, and 4 except when the MFIVs or associated MFCV are closed and deactivated,” to STS 3.7.7 Applicability, “MODES 1, 2, 3, and 4.” This change is necessary because GTS 3.7.7 would not apply to startup feedwater valves whose flow path is isolated when the unit is in Mode 1, 2, 3, or 4. As a result, when a startup feedwater control valve is inoperable in Mode 1, 2, 3, or 4, once the affected flow path is isolated, as required by GTS 3.7.7 Required Action A.1 or B.1, GTS 3.7.7 would no longer apply and the periodic verification of GTS 3.7.7 Required Action A.2 would not be required. This is not the desired intent of LCO 3.7.7.

Similar to the Applicability of GTS 3.6.3, the GTS 3.7.7 Applicability is changed to eliminate this exception once the affected flow path is isolated. The startup feedwater control valves will remain required to be Operable in Modes 1, 2, 3, and 4, even when the affected flow path is isolated. This change will ensure that the periodic verification of GTS Required Action A.2 is performed as long as a valve in the affected flow path remains inoperable. This change is acceptable since it ensures the flow path is periodically verified to be in the post-accident state (i.e., isolated) anytime when in Modes 1, 2, 3, and 4 with an associated startup feedwater control valve inoperable.

GTS 3.6.3 provides the requirement for the containment isolation valve function. Some of the valves that are containment isolation valves are also required to be operable to meet other safety related functions and these requirements are provided in separate LCOs. Thus, for certain containment isolation valves on closed systems, the same valve has two separate TS that cover its requirements. GTS 3.7.1 provides requirements for MSSVs, GTS 3.7.2 provides requirements for the MSIVs, GTS 3.7.3 provides requirements for the MFIVs, GTS 3.7.7 provides requirements for the startup feedwater isolation valves, and GTS 3.7.10 provides requirements for the power operated relief valve (PORV) block valves and SG blowdown isolation valves.

In lieu of including these valves in both GTS 3.6.3 and their individual Specification, GTS 3.6.3 is revised to exclude all closed system containment isolation valves. All of the moved containment isolation valves are associated with a closed system and they are the only closed system containment isolation valves. The individual Specifications where these valves are moved to include the same or more restrictive requirements as currently in GTS 3.6.3, or have been revised to include the requirements from GTS 3.6.3.

For the startup feedwater isolation valves the Applicability of GTS 3.7.7, which is Modes 1, 2, 3, and 4 except when the startup feedwater flow paths are isolated is revised to delete the exception for conditions where the startup feedwater flow paths are isolated to be consistent with the Applicability of GTS 3.6.3, which is Modes 1, 2, 3, and 4. Thus, the proposed

Applicability is consistent with the GTS 3.6.3 Applicability for the startup feedwater control valves.

For the startup feedwater isolation valves GTS 3.7.7 Required Actions do not include the restrictions of GTS 3.6.3 Required Action C.1 that require deactivating the startup feedwater isolation valves in the closed position if it were used to meet the action to isolate the flow path. Conversely, GTS 3.6.3 Required Action C.2 periodic verification of “Once per 31 days” is less restrictive than the periodic verification of GTS 3.7.7 Required Action A.2 of “Once per 7 days.” The GTS 3.7.7 more frequent verification adequately compensates for not imposing a requirement to deactivate the startup feedwater isolation valves in the closed position. Additionally, GTS 3.7.7 Actions do not contain the flexibility found in GTS 3.6.3 Required Action C.2 Notes allowing administrative means to verify flow path isolation. The flexibility of GTS 3.6.3 Actions Note 1 (“Penetration flow path(s) may be unisolated intermittently under administrative controls”) and Actions Note 2 (“Separate Condition entry is allowed for each penetration flow path”) are consistent with GTS 3.7.7 Actions Notes 1 and 2; therefore GTS 3.7.7 imposes consistent or more restrictive Actions. GTS 3.6.3 Actions Notes 3 and 4 do not apply to startup feedwater isolation valves and are not included in STS 3.7.7.

The overall impact on safety from moving the Action requirement for startup feedwater isolation valves out of GTS 3.6.3 is minimal. The more restrictive Actions of GTS 3.7.7 to affect isolation result in achieving the appropriate compensatory measure and protection of public health and safety sooner and the more frequent verification adequately compensates for not requiring that the startup feedwater isolation valves be deenergized.

In addition, due to the Applicability change, DOC M11 and DOC M15 add STS Required Action C.3 to be in Mode 5 within 36 hours. This ensures that when conditions warrant, the Applicability of the LCO is exited.

In the event that the flow path associated with startup feedwater isolation valves is not isolated, the default actions of GTS 3.6.3 Action D require being in Mode 3 within 6 hours and being in Mode 5 within 36 hours, which is consistent with GTS 3.7.7 Required Actions C.1 and STS 3.7.7 Required Action C.3. GTS 3.7.7 Required Action C.2 imposes a more restrictive requirement to be in Mode 4 with the Reactor Coolant System (RCS) cooling provided by the Normal Residual Heat Removal System (RNS). These actions provide consistent or more restrictive actions for the startup feedwater isolation valves as moved from GTS 3.6.3 into STS 3.7.7. STS 3.7.7 Required Action C.3 requires Mode 5 to be ultimately entered when the flow path is not isolated as required by Actions A and B. Under similar conditions (i.e., flow path not isolated as required by GTS 3.6.3 Action C), GTS 3.6.3 Condition D.2 requires Mode 5 to be entered.

Finally, DOC M11 STS SR 3.7.7.2 is added for the startup feedwater isolation valves, which requires verification that each startup feedwater isolation valve actuates to the isolation position on an actual or simulated actuation signal at a Frequency of 24 months. STS SR 3.7.7.2 is consistent with GTS SR 3.6.3.5. GTS 3.6.3 SRs 3.6.3.1, 3.6.3.2, and 3.6.3.3 are not applicable to startup feedwater isolation valves. The GTS SR 3.6.3.4 surveillance to verify isolation time in accordance with the Inservice Testing Program is equivalent to GTS SR 3.7.7.1 to verify operability in accordance with the Inservice Testing Program. Therefore, the STS 3.7.7 LCO requirement, Actions, and SRs, as they relate to the startup feedwater isolation valves, are either consistent with or more restrictive than those in GTS 3.6.3.

DOC L01 deletes the Actuation Device Test and adds STS SR 3.7.7.2 that states: “Verify each startup feedwater isolation and control valve actuates to the isolation position on an actual or simulated actuation signal.” In accordance with the defined term, an actuation device test is a test of the actuated equipment. And as discussed in the TS Bases, performance of an actuation device test demonstrates that the actuated device responds to a simulated actuation signal. As

such, Surveillances associated with the testing of the actuated equipment should be addressed in the actuated equipment Specifications, where failures of the surveillance would lead to entering the Actions for the inoperable actuated equipment.

Currently, the only Surveillances that utilize this defined term are in GTS 3.3.2, “Engineered Safety Feature Actuation System (ESFAS) Instrumentation;” as GTS SRs 3.3.2.7, 3.3.2.8, and 3.3.2.9. GTS SRs 3.3.2.7 and 3.3.2.8 provide the actuation device test for Engineered Safety Features (ESF) that are actuated by Table 3.3.2-1, Function 26. As such, failures of GTS SRs 3.3.2.7 and 3.3.2.8 (i.e., failures in the actuated equipment) would inappropriately result in applying the Actions of GTS 3.3.2 for Function 26. This is inconsistent with the intent of applying Actions specific to the equipment inoperability. Therefore GTS SRs 3.3.2.7 and 3.3.2.8 are deleted from GTS 3.3.2 and Table 3.3.2-1, Function 26, ESF Actuation. In conjunction with this deletion, each Specification for ESF actuated equipment is provided with Surveillance(s) that appropriately address the testing of the actuated devices consistent with these SRs and the definition being removed. In certain GTS actuated device Specifications, there is currently an appropriate actuated device test and no new SR is added. Where an actuated device test is not specified in the GTS actuated equipment Specification, a new SR is added.

The effect of moving the requirement for the actuated device test from GTS 3.3.2 to the individual equipment Specifications is for less restrictive actions when the device is inoperable. As an SR associated with GTS 3.3.2, Table 3.3.2-1, Function 26 for Modes 1, 2, 3, and 4, would impose a 6 hour restoration (Action D) prior to a required plant shutdown (Action O). GTS 3.7.7 with SRs added to address actuation device testing has a 7-day restoration allowance. These less restrictive actions are currently approved in STS as appropriate for the inoperable devices. The more restrictive actions imposed by GTS 3.3.2 are therefore excessively restrictive. The change maintains the same level of safety provided by the existing separate GTS Actions for inoperability of the specific actuated devices.

The remaining changes are editorial, clarifying, grammatical, or otherwise considered administrative. These changes do not affect the technical content, but improve the readability, implementation, and understanding of the requirements, and are therefore acceptable.

Having found that this GTST’s proposed changes to the GTS and Bases are acceptable, the NRC staff concludes that AP1000 STS Subsection 3.7.7 is an acceptable model Specification for the AP1000 standard reactor design.

References to Previous NRC Safety Evaluation Reports (SERs):

None

VIII. Review Information

Evaluator Comments:

None

Randy Belles
Oak Ridge National Laboratory
865-574-0388
bellesrj@ornl.gov

Review Information:

Availability for public review and comment on Revision 0 of this traveler approved by NRC staff on 5/19/2014.

APOG Comments (Ref. 7) and Resolutions:

1. (Internal # 3) Throughout the Bases, references to Sections and Chapters of the FSAR do not include the “FSAR” clarifier. Since these Section and Chapter references are to an external document, it is appropriate (DOC A003) to include the “FSAR” modifier. This is resolved by adding the FSAR modifier as appropriate.

2. (Internal # 6) The GTST sections often repeat VEGP LAR DOCs, which reference “existing” and “current” requirements. The inclusion in the GTST of references to “existing” and “current,” are not always valid in the context of the GTS. Each occurrence of “existing” and “current” should be revised to be clear and specific to GTS, MTS, or VEGP COL TS (or other), as appropriate. Noted ambiguities are corrected in the GTST body.

3. (Internal # 7) Section VII, GTST Safety Evaluation, inconsistently completes the subsection “References to Previous NRC Safety Evaluation Reports (SERs)” by citing the associated SE for VEGP 3&4 COL Amendment 13. It is not clear whether there is a substantive intended difference when omitting the SE citation. This is resolved by removing the SE citation in Section VII of the GTST and ensuring that appropriate references to the consistent citation of this reference in Section X of the GTST are made.

4. (Internal # 424) In the “Background” section of the Bases, revise the second paragraph as follows:

   > The startup feedwater system serves no safety related function and has no safety related design basis, except to isolate feedwater in the event of a **Feedline Break (FLB)**~~feedwater~~, **Steam Line Break (SLB**)~~steam line break~~, a steam generator tube rupture **(SGTR),** or other secondary side event.

   This non-technical change provides improved clarity, consistency, and operator usability. This is resolved by making the recommended change with an additional edit to capitalize steam generator tube rupture for consistency.

5. (Internal # 425) In the “ASA” section of the Bases, revise the first paragraph as follows:

The basis for the requirement to isolate the startup feedwater system is established by the analysis for large ~~Steam Line Break (~~SLB~~)~~ inside containment. It is also based on the analysis for a large ~~Feedline Break (~~FLB~~)~~ and a steam generator tube rupture.

This non-technical change provides improved clarity, consistency, and operator usability. This is resolved by making the recommended change with additional edits for added clarity:

The basis for the requirement to isolate the startup feedwater system is established by the analysis for large ~~Steam Line Break (~~SLB~~)~~ inside containment. It is also based on the **analyses** ~~analysis~~ for a large ~~Feedline Break (~~FLB~~)~~ **inside containment** and **an SGTR**~~a steam generator tube rupture~~.

In addition, revise the second paragraph as follows:

. . . Failure to isolate the startup feedwater following ~~a steam generator tube rupture~~**an SGTR** may result in overfilling the steam generator.

Revise the third paragraph as follows:

~~Low T_{cold} or high steam generator level~~ **The following ESFAS** signals **automatically** close the startup feedwater control and isolation valves and ~~trips~~**trip** the startup feedwater pumps~~:~~.

- **RCS Cold Leg Temperature (T_{cold}) - Low (Table 3.3.8-1 Function 11)**
- **SG Narrow Range Water Level - High (Table 3.3.8-1 Function 22)coincident with reactor trip (P-4) (LCO 3.3.12)**
- **SG Narrow Range Water Level - High 2 (Table 3.3.8-1 Function 23)**

In the “Applicability” section of the Bases, revise the first paragraph as follows:

The startup feedwater isolation and control valves must be OPERABLE whenever there is significant mass and energy in the Reactor Coolant System and the steam generators. In MODES 1, 2, 3 and 4, **where a DBA could cause a release of radioactive material to containment,** the startup feedwater isolation and control valves are required to be OPERABLE in order to limit the amount of mass and energy that could be added to containment in the event of ~~a~~**an** SLB or FLB**, and to** ~~and~~ prevent steam generator overfill in the event of an SGTR ~~**and where a DBA could cause a release of radioactive material to containment**~~. ~~When the valves are closed, they are already performing their safety function.~~

6. (Internal # 426 and 427) In the “Actions” section of the Bases, under the heading “A.1 and A.2” revise the third paragraph as follows:

For flow paths isolated in accordance with Required Action ~~A.2.1~~**A.1**, the affected flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure that flow paths required to be isolated following an accident will be in the isolation position should an event occur. This Required Action does not require any testing or device manipulation. Rather, it involves verification~~, through a system walkdown,~~ that the isolation

devices are in the correct position. The Completion Time of “once per 7 days” is appropriate considering the fact that the devices are operated under administrative controls, valve status indications in the main control room and the probability of their misalignment is low.

This non-technical change provides improved clarity, consistency, and operator usability and implements TSTF-440-A. This is resolved by making the recommended change with additional edits:

For flow paths isolated in accordance with Required Action ~~A.2.1~~**A.1**, the affected flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure that flow paths required to be isolated following an accident will be in the isolation position should an event occur. ~~This~~ Required Action **A.2** does not require any testing or device manipulation. Rather, it involves verification~~, through a system walkdown,~~ that the isolation devices are in the correct position. The **periodic** Completion Time of “once per 7 days” is appropriate considering ~~the fact~~ that the devices are operated under administrative controls, valve status indication~~s~~ **is provided** in the main control room and the probability of ~~their~~**valve** misalignment is low.

In addition, TSTF-440-A is listed in GTST Section I and discussion of the TSTF is added to GTST Section VI.

NRC Final Approval Date: 12/8/2015

NRC Contact:

T. R. Tjader
United States Nuclear Regulatory Commission
301-415-1187
Theodore.Tjader@nrc.gov

IX. Evaluator Comments for Consideration in Finalizing Technical Specifications and Bases

None

X. References Used in GTST

1. AP1000 DCD, Revision 19, Section 16, “Technical Specifications,” June 2011 (ML11171A500).

2. Southern Nuclear Operating Company, Vogtle Electric Generating Plant, Units 3 and 4, Technical Specifications Upgrade License Amendment Request, February 24, 2011 (ML12065A057).

3. NRC Safety Evaluation (SE) for Amendment No. 13 to Combined License (COL) No. NPF-91 for Vogtle Electric Generating Plant (VEGP) Unit 3, and Amendment No. 13 to COL No. NPF-92 for VEGP Unit 4, September 9, 2013, ADAMS Package Accession No. ML13238A337, which contains:

ML13238A355	Cover Letter - Issuance of License Amendment No. 13 for Vogtle Units 3 and 4 (LAR 12-002).
ML13238A359	Enclosure 1 - Amendment No. 13 to COL No. NPF-91
ML13239A256	Enclosure 2 - Amendment No. 13 to COL No. NPF-92
ML13239A284	Enclosure 3 - Revised plant-specific TS pages (Attachment to Amendment No. 13)
ML13239A287	Enclosure 4 - Safety Evaluation (SE), and Attachment 1 - Acronyms
ML13239A288	SE Attachment 2 - Table A - Administrative Changes
ML13239A319	SE Attachment 3 - Table M - More Restrictive Changes
ML13239A333	SE Attachment 4 - Table R - Relocated Specifications
ML13239A331	SE Attachment 5 - Table D - Detail Removed Changes
ML13239A316	SE Attachment 6 - Table L - Less Restrictive Changes

   The following documents were subsequently issued to correct an administrative error in Enclosure 3:

ML13277A616	Letter - Correction To The Attachment (Replacement Pages) - Vogtle Electric Generating Plant Units 3 and 4-Issuance of Amendment Re: Technical Specifications Upgrade (LAR 12-002) (TAC No. RP9402)
ML13277A637	Enclosure 3 - Revised plant-specific TS pages (Attachment to Amendment No. 13) (corrected)

4. TSTF-GG-05-01, “Writer's Guide for Plant-Specific Improved Technical Specifications,” June 2005.

5. RAI Letter No. 01 Related to License Amendment Request (LAR) 12-002 for the Vogtle Electric Generating Plant Units 3 and 4 Combined Licenses, September 7, 2012 (ML12251A355).

6. Southern Nuclear Operating Company, Vogtle Electric Generating Plant, Units 3 and 4, Response to Request for Additional Information Letter No. 01 Related to License Amendment Request LAR-12-002, ND-12-2015, October 04, 2012 (ML12286A363 and ML12286A360)

7. APOG-2014-008, APOG (AP1000 Utilities) Comments on AP1000 Standardized Technical Specifications (STS) Generic Technical Specification Travelers (GTSTs), Docket ID NRC-2014-0147, September 22, 2014 (ML14265A493).

XI. MARKUP of the Applicable GTS Subsection for Preparation of the STS NUREG

The entire section of the Specifications and the Bases associated with this GTST is presented next.

Changes to the Specifications and Bases are denoted as follows: Deleted portions are marked in strikethrough red font, and inserted portions in bold blue font.

3.7 PLANT SYSTEMS

3.7.7 Startup Feedwater Isolation and Control Valves

LCO 3.7.7 **Each** ~~Both~~ Startup Feedwater Isolation Valve~~s~~ and Control Valve~~s~~ shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4 ~~except when the startup feedwater flow paths are isolated~~.

ACTIONS

----------NOTES----------

1. Flow paths may be unisolated intermittently under administrative controls.

2. Separate Condition entry is allowed for each flow path.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more flow paths with one inoperable valve.	A.1 Isolate the affected flow path~~(s)~~. AND A.2 Verify affected flow path~~(s)~~ is isolated.	72 hours Once per 7 days
B. One flow path with two inoperable valves.	B.1 Isolate the affected flow path.	8 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND	6 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. (continued)	C.2	Be in MODE 4 with the Reactor Coolant System (RCS) cooling provided by the Normal Residual Heat Removal System (RNS).	24 hours
	AND		
	C.3	**Be in MODE 5** ~~Isolate the affected flow path(s)~~.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.7.1	Verify **each** ~~both~~ startup feedwater isolation and control valve~~s~~ **is** ~~are~~ OPERABLE.	In accordance with the Inservice Testing Program
SR 3.7.7.2	**Verify each startup feedwater isolation and control valve actuates to the isolation position on an actual or simulated actuation signal.**	**24 months**

B 3.7 PLANT SYSTEMS

B 3.7.7 Startup Feedwater Isolation and Control Valves

BASES

BACKGROUND

The startup feedwater system supplies feedwater to the steam generators during plant startup, hot standby and cooldown, and in the event of main feedwater unavailability.

The startup feedwater system serves no safety related function and has no safety related design basis, except to isolate feedwater in the event of a ~~feedwater~~ **Feedline Break (FLB)**, **a S**~~s~~team **L**~~l~~ine **B**~~b~~reak **(SLB)**, a **S**~~s~~team **G**~~g~~enerator **T**~~t~~ube **R**~~r~~upture **(SGTR),** or other secondary side event.

The startup feedwater system consists of a flow path to each of the steam generators. Each flow path consists of two series startup feedwater valves to provide feedwater control for low feedwater demand conditions. Feedwater can be supplied to the startup feedwater line via either the main or startup feedwater pumps. The feedwater is delivered directly to the **steam generator (**SG**)** independent of the main feedwater line. Each startup feedwater line contains one control valve and one isolation valve (Ref. 1).

APPLICABLE SAFETY ANALYSES

The basis for the requirement to isolate the startup feedwater system is established by the analysis for large ~~Steam Line Break (~~SLB~~)~~ inside containment. It is also based on the **analyses** ~~analysis~~ for a large ~~Feedline Break (~~FLB~~)~~ and **an SGTR** ~~a steam generator tube rupture~~.

Failure to isolate the startup feedwater system following a SLB or FLB can lead to additional mass and energy being delivered to the steam generators, resulting in excessive cooldown and additional mass and energy release in containment. Failure to isolate the startup feedwater **system** following **an SGTR** ~~a steam generator tube rupture~~ may result in overfilling the steam generator.

The following ESFAS ~~Low T_{cold} or high steam generator level~~ signals **automatically** close the startup feedwater control and isolation valves and trip~~s~~ the startup feedwater pumps**:**~~.~~

- **RCS Cold Leg Temperature (T_{cold}) – Low**

BASES

APPLICABLE SAFETY ANALYSES (continued)

(Table 3.3.8-1 Function 11)

- **SG Narrow Range Water Level – High (Table 3.3.8-1 Function 22) coincident with reactor trip (P-4) (LCO 3.3.12)**

- **SG Narrow Range Water Level – High 2 (Table 3.3.8-1 Function 23)**

In addition, the startup feedwater isolation and control valves are containment isolation valves and support the assumptions related to minimizing the loss of inventory and establishing the containment boundary during major accidents. Therefore, the safety analysis of any event requiring isolation of containment is applicable to these valves.

The startup feedwater isolation and control valves are components which actuate to mitigate a Design Basis Accident, and as such meet Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

This LCO ensures that the startup feedwater isolation and control valves will actuate on command, following a SLB, FLB or SGTR, and isolate startup feedwater flow to the steam generators.

The startup feedwater isolation and control valves are considered OPERABLE when they automatically close on an isolation actuation signal, and their isolation times are within the required limits.

APPLICABILITY

The startup feedwater isolation and control valves must be OPERABLE whenever there is significant mass and energy in the Reactor Coolant System and the steam generators. In MODES 1, 2, 3 and 4, **where a DBA could cause a release of radioactive material to containment,** the startup feedwater isolation and control valves are required to be OPERABLE in order to limit the amount of mass and energy that could be added to containment in the event of a**n** SLB or FLB and **to** prevent steam generator overfill in the event of an SGTR. ~~When the valves are closed, they are already performing their safety function.~~

BASES

APPLICABILITY (continued)

In MODES 5 and 6, the energy in the steam generators is low, and isolation of the startup feedwater system is not required.

ACTIONS

The ACTIONS are modified by a Note allowing flow paths to be unisolated intermittently under administrative controls. These controls consist of stationing a dedicated operator at the valve controls, who is in continuous communication with the control room. In this way, the flow paths can be rapidly isolated.

The second Note allows separate Condition entry for each flow path. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable flow path.

A.1 and A.2

With only one isolation or control valve OPERABLE in one or more flow paths, there is no redundant capability to isolate the flow paths. In this case, both an isolation and a control valve in each flow path must be restored to OPERABLE status with 72 hours, or the flow path must be isolated. A Completion Time of 72 hours is acceptable since, with one valve in a flow path inoperable, there is a second valve available in the flow path to isolate the line.

If the inoperable valve in the flow path can not be restored to OPERABLE status, then the flow path must be isolated within a Completion Time of 72 hours. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure.

For flow paths isolated in accordance with Required Action A.~~2.~~1, the affected flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure that flow paths required to be isolated following an accident will be in the isolation position should an event occur. ~~This~~ Required Action **A.2** does not require any testing or device manipulation. Rather, it involves verification~~, through a system walkdown,~~ that the isolation devices are in the correct position. The **periodic** Completion Time of “once per 7 days” is appropriate considering ~~the fact~~ that the devices are operated under administrative controls, valve status indication~~s~~ **is provided** in the main control room and the probability of **valve** ~~their~~ misalignment is low.

BASES

ACTIONS (continued)

B.1

With both the isolation and control valves inoperable in one flow path, the affected flow path must be restored to OPERABLE status or isolated within a Completion Time of 8 hours. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure.

C.1, C.2, and C.3

If the isolation and control valves cannot be restored to OPERABLE status, closed, or isolated within the associated Completion Times, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the plant must be placed in least MODE 3 within 6 hours, ~~and~~ in MODE 4 with RCS cooling provided by the normal residual heat removal system within 24 hours, and **in MODE 5** ~~the affected flow path isolated~~ 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 plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.7.1

This surveillance requires verification in accordance with the Inservice Testing Program to assure that **each** ~~both~~ startup feedwater isolation and control valve~~s~~ **is** ~~are~~ OPERABLE. The Surveillance Frequency is provided in the Inservice Testing Program.

SR 3.7.7.2

This SR ensures that each startup feedwater isolation valve and startup feedwater control valve will actuate to its isolation position on an actual or simulated actuation signal. The ACTUATION LOGIC TEST overlaps this Surveillance to provide complete testing of the assumed safety function.

The 24 month Frequency is based on the need to perform this Surveillance during periods in which the plant is shutdown for refueling to prevent any upsets of plant operation.

BASES

REFERENCES 1. **FSAR** Section 10.4.9, “Startup Feedwater System.”

XII. Applicable STS Subsection After Incorporation of this GTST's Modifications

The entire subsection of the Specifications and the Bases associated with this GTST, following incorporation of the modifications, is presented next.

3.7 PLANT SYSTEMS

3.7.7 Startup Feedwater Isolation and Control Valves

LCO 3.7.7 Each Startup Feedwater Isolation Valve and Control Valve shall be OPERABLE.

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

ACTIONS

----------NOTES----------

1. Flow paths may be unisolated intermittently under administrative controls.

2. Separate Condition entry is allowed for each flow path.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more flow paths with one inoperable valve.	A.1 Isolate the affected flow path. AND A.2 Verify affected flow path is isolated.	72 hours Once per 7 days
B. One flow path with two inoperable valves.	B.1 Isolate the affected flow path.	8 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND	6 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. (continued)	C.2	Be in MODE 4 with the Reactor Coolant System (RCS) cooling provided by the Normal Residual Heat Removal System (RNS).	24 hours
	AND		
	C.3	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.7.1	Verify each startup feedwater isolation and control valve is OPERABLE.	In accordance with the Inservice Testing Program
SR 3.7.7.2	Verify each startup feedwater isolation and control valve actuates to the isolation position on an actual or simulated actuation signal.	24 months

B 3.7 PLANT SYSTEMS

B 3.7.7 Startup Feedwater Isolation and Control Valves

BASES

BACKGROUND

The startup feedwater system supplies feedwater to the steam generators during plant startup, hot standby and cooldown, and in the event of main feedwater unavailability.

The startup feedwater system serves no safety related function and has no safety related design basis, except to isolate feedwater in the event of a Feedline Break (FLB), a Steam Line Break (SLB), a Steam Generator Tube Rupture (SGTR), or other secondary side event.

The startup feedwater system consists of a flow path to each of the steam generators. Each flow path consists of two series startup feedwater valves to provide feedwater control for low feedwater demand conditions. Feedwater can be supplied to the startup feedwater line via either the main or startup feedwater pumps. The feedwater is delivered directly to the steam generator (SG) independent of the main feedwater line. Each startup feedwater line contains one control valve and one isolation valve (Ref. 1).

APPLICABLE SAFETY ANALYSES

The basis for the requirement to isolate the startup feedwater system is established by the analysis for large SLB inside containment. It is also based on the analyses for a large FLB and an SGTR.

Failure to isolate the startup feedwater system following a SLB or FLB can lead to additional mass and energy being delivered to the steam generators, resulting in excessive cooldown and additional mass and energy release in containment. Failure to isolate the startup feedwater system following an SGTR may result in overfilling the steam generator.

The following ESFAS signals automatically close the startup feedwater control and isolation valves and trip the startup feedwater pumps:

- RCS Cold Leg Temperature (T_{cold}) – Low
  (Table 3.3.8-1 Function 11)

- SG Narrow Range Water Level – High
  (Table 3.3.8-1 Function 22)
  coincident with reactor trip (P-4) (LCO 3.3.12)

BASES

APPLICABLE SAFETY ANALYSES (continued)

- SG Narrow Range Water Level – High 2
  (Table 3.3.8-1 Function 23)

In addition, the startup feedwater isolation and control valves are containment isolation valves and support the assumptions related to minimizing the loss of inventory and establishing the containment boundary during major accidents. Therefore, the safety analysis of any event requiring isolation of containment is applicable to these valves.

The startup feedwater isolation and control valves are components which actuate to mitigate a Design Basis Accident, and as such meet Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

This LCO ensures that the startup feedwater isolation and control valves will actuate on command, following a SLB, FLB or SGTR, and isolate startup feedwater flow to the steam generators.

The startup feedwater isolation and control valves are considered OPERABLE when they automatically close on an isolation actuation signal, and their isolation times are within the required limits.

APPLICABILITY

The startup feedwater isolation and control valves must be OPERABLE whenever there is significant mass and energy in the Reactor Coolant System and the steam generators. In MODES 1, 2, 3 and 4, where a DBA could cause a release of radioactive material to containment, the startup feedwater isolation and control valves are required to be OPERABLE in order to limit the amount of mass and energy that could be added to containment in the event of an SLB or FLB and to prevent steam generator overfill in the event of an SGTR.

In MODES 5 and 6, the energy in the steam generators is low, and isolation of the startup feedwater system is not required.

ACTIONS

The ACTIONS are modified by a Note allowing flow paths to be unisolated intermittently under administrative controls. These controls consist of stationing a dedicated operator at the valve controls, who is in continuous communication with the control room. In this way, the flow paths can be rapidly isolated.

BASES

ACTIONS (continued)

The second Note allows separate Condition entry for each flow path. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable flow path.

A.1 and A.2

With only one isolation or control valve OPERABLE in one or more flow paths, there is no redundant capability to isolate the flow paths. In this case, both an isolation and a control valve in each flow path must be restored to OPERABLE status with 72 hours, or the flow path must be isolated. A Completion Time of 72 hours is acceptable since, with one valve in a flow path inoperable, there is a second valve available in the flow path to isolate the line.

If the inoperable valve in the flow path can not be restored to OPERABLE status, then the flow path must be isolated within a Completion Time of 72 hours. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure.

For flow paths isolated in accordance with Required Action A.1, the affected flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure that flow paths required to be isolated following an accident will be in the isolation position should an event occur. Required Action A.2 does not require any testing or device manipulation. Rather, it involves verification that the isolation devices are in the correct position. The periodic Completion Time of “once per 7 days” is appropriate considering that the devices are operated under administrative controls, valve status indication is provided in the main control room and the probability of valve misalignment is low.

B.1

With both the isolation and control valves inoperable in one flow path, the affected flow path must be restored to OPERABLE status or isolated within a Completion Time of 8 hours. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure.

BASES

ACTIONS (continued)

C.1, C.2, and C.3

If the isolation and control valves cannot be restored to OPERABLE status, closed, or isolated within the associated Completion Times, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the plant must be placed in least MODE 3 within 6 hours, in MODE 4 with RCS cooling provided by the normal residual heat removal system within 24 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 plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.7.1

This surveillance requires verification in accordance with the Inservice Testing Program to assure that each startup feedwater isolation and control valve is OPERABLE. The Surveillance Frequency is provided in the Inservice Testing Program.

SR 3.7.7.2

This SR ensures that each startup feedwater isolation valve and startup feedwater control valve will actuate to its isolation position on an actual or simulated actuation signal. The ACTUATION LOGIC TEST overlaps this Surveillance to provide complete testing of the assumed safety function.

The 24 month Frequency is based on the need to perform this Surveillance during periods in which the plant is shutdown for refueling to prevent any upsets of plant operation.

REFERENCES

1. FSAR Section 10.4.9, “Startup Feedwater System.”