October 13, 2005 TSTF-05-21

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

SUBJECT: TSTF-491, Revision 1, "Removal of Main Steam and Main Feedwater Valve Isolation Times From Technical Specifications"

Dear Sir or Madam:

Enclosed for NRC review is Revision 1 of TSTF-491, "Removal of Main Steam and Main Feedwater Valve Isolation Times From Technical Specifications." This revision incorporates an NRC requested clarification to the justification and the Bases that the subject valves are also tested in accordance with the Inservice Testing Program.

Any NRC review fees associated with the review of TSTF-491, Revision 1 should be billed to the Westinghouse Owners Group.

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

Wesley Sparkman (WOG)

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Brian Woods (WOG/CE)

Paul Infanger (BWOG)

Enclosure

cc: Thomas H. Boyce, Technical Specifications Section, NRC
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Administered by EXCEL Services Corporation

# Technical Specification Task Force
# Improved Standard Technical Specifications Change Traveler

**Removal of Main Steam and Main Feedwater Valve Isolation Times From Technical Specifications**

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

Classification: 1) Technical Change

Recommended for CLIIP?: Yes

Correction or Improvement: Improvement

NRC Fee Status: Not Exempt

Benefit: Avoids Future Amendments

Industry Contact: Wes Sparkman, (205) 992-5061, wasparkm@southernco.com

## 1.0 DESCRIPTION

The proposed change revises the Improved Standard Technical Specification (ISTS) requirements in ISTS 3.7.2, "Main Steam Isolation Valves (MSIVs)" and

- NUREG-1430 ISTS 3.7.3, "[Main Feedwater Stop Valves (MFSVs), Main Feedwater Control Valves (MFCVs), and Associated Startup Feedwater Control Valves (SFCVs)],"
- NUREG-1431, ISTS 3.7.3, "Main Feedwater Isolation Valves (MFIVs), Main Feedwater Regulation Valves (MFRVs), and [associated bypass valves]," and
- NUREG-1432, ISTS 3.7.3, "Main Feedwater Isolation Valves (MFIVs) [and [MFIV] Bypass Valves]."

These valves are herein referred to generically as the Main Steam and Main Feedwater isolation valves.

The proposed change removes the specific isolation time for the isolation valves from the associated ISTS Surveillance Requirements (SRs). The bracketed isolation time in the ISTS SRs is replaced with the requirement to verify the valve isolation time is within limits. The specific valve isolation time required to meet the ISTS surveillances would be located outside of the technical specifications in a document subject to control by the 10 CFR 50.59 process.

In accordance with the ISTS definition of Engineered Safety Feature (ESF) Response Time, the affected valve isolation times are part of the ESF Response Time. The ISTS does not specify the specific ESF Response Time acceptance criteria in the technical specifications or Bases. The ISTS only requires the ESF response time to be verified within the limit. The proposed change would make the requirements pertaining to ESF Response Time consistent within the ISTS.

Similar to the current allowance for the ESF and Reactor Trip System (RTS) Response Times to be located outside the technical specifications, the proposed change will allow the affected valve isolation times to be revised in accordance with 10 CFR 50.59 instead of a license amendment request.



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## 2.0 PROPOSED CHANGE

ISTS SR 3.7.2.1 currently states "Verify the isolation time of each MSIV is ≤ [4.6] seconds." The proposed change would revise SR 3.7.2.1 to state "Verify the isolation time of each MSIV is within limits."

ISTS SR 3.7.3.1 states "Verify the isolation time of each [NUREG-specific Main Feedwater isolation valve title] is ≤ [7] seconds. The proposed change would revise SR 3.7.3.1 to state "Verify the isolation time of each [NUREG-specific Main Feedwater isolation valve title] is within limits."

The proposed changes would make the affected surveillances more consistent with the ESF Response Time requirement in SR 3.3.2.10 which states "Verify ESFAS RESPONSE TIMES are within limit".

In summary, the proposed change would remove the plant specific details of valve operability (i.e., the isolation time) but continues to require the affected valves be verified operable including being capable of isolating within the required time. Similar to the Engineered Safety Feature and Reactor Trip System Response Time acceptance criteria, the required valve isolation times would be located outside the technical specifications in a document subject to control by the 10 CFR 50.59 process.

The Bases are also revised to reflect this change.



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## 3.0 BACKGROUND

MSIVs

The MSIVs isolate steam flow from the secondary side of the steam generators following a high energy line break (HELB). MSIV closure terminates flow from the unaffected (intact) steam generators. One MSIV is located in each main steam line outside of, but close to, containment. The MSIVs are downstream from the main steam safety valves (MSSVs) and auxiliary feedwater (AFW) (B&W plants - Emergency Feedwater) pump turbine steam supply, to prevent MSSV and AFW isolation from the steam generators by MSIV closure. Closing the MSIVs isolates each steam generator from the others, and isolates the turbine, Steam Bypass System, and other auxiliary steam supplies from the steam generators. The MSIVs close on a main steam isolation signal typically generated by either low steam generator pressure or high containment pressure. The MSIVs are typically designed to fail closed on loss of control or actuation power. The design basis of the MSIVs is typically established by the containment analysis for steam line break (SLB) inside containment, and the accident analyses associated with SLB events outside containment.

The Standard Review Plan, Chapter 10.3, "Main Steam Supply System," contains additional information describing the functional requirements of the Main Steam System and MSIVs.

Main Feedwater Isolation Valves

The MFIVs isolate main feedwater (MFW) flow to the secondary side of the steam generators following a high energy line break (HELB). The safety related function of the MFRVs is to provide the second isolation of MFW flow to the secondary side of the steam generators following an HELB. Closure of the MFIVs terminates flow to the steam generators, terminating the event for feedwater line breaks (FWLBs) occurring upstream of the MFIVs. The consequences of events occurring in the main steam lines or in the MFW lines downstream from the MFIVs will be mitigated by their closure. Closure of the MFIVs effectively terminates the addition of feedwater to an affected steam generator, limiting the mass and energy release for steam line breaks (SLBs) or FWLBs inside containment, and reducing the cooldown effects for SLBs. The MFW isolation signal is typically generated by a Safety Injection Signal or on high steam generator water level. The design basis of the MFIVs is typically established by the analyses for the large SLB and/or the large FWLB.

The Standard Review Plan, Chapter 10.4.7, "Condensate and Feedwater System," contains additional information describing the functional requirements of the Main Feedwater System.

Description of Change

The proposed change involves the ESF Functions of Main Steam and Main Feedwater Isolation described above. The affected valve isolation times are important to the Main Steam and Main Feedwater Isolation Functions because they are part of the associated overall ESF Response Time assumed in the safety analyses. However, the safety analysis does not address the individual components of the overall ESF Response Time. This concept was described in the NRC Safety Evaluation Report (SER) for Beaver Valley Power Station (BVPS) Unit 2 Amendment # 137 issued 6/25/03 (Ref.1). In this Amendment, BVPS revised the MSIV full closure time specified in the technical specification surveillance. The BVPS proposed change to the MSIV closure time did not result in a change to the overall ESF Response Time assumed in the safety analyses for Main Steam Isolation but was necessary because the valve closure portion of the ESF Response Time was specified in the technical specifications. In the associated SER for this amendment, the NRC concluded the change was acceptable, in part, because "The current safety analyses which credit steam line isolation will remain unaffected since the analyses only address the overall delay time which combines both the signal generation and the MSIV closure time, and does not individually address signal generation nor valve stroke time."



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The ISTS, similar to the BVPS technical specifications, allows the ESF Response Time for the Main Steam and Main Feedwater Isolation Functions to be controlled outside of the Technical Specifications but requires the associated valve isolation times (part of the ESF Response Time) to be retained within the technical specifications. It should be noted that the ESF response time, by the ISTS definition, includes the time it takes the ESF equipment to perform its safety function. The ISTS definition of ESF Response time states in part: "The ESF RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.)." The requirement for the valve isolation portion of the ESF Response Time for the Main Steam and Main Feedwater Isolation Functions to be in the technical specifications appears to be unique. The specific values for the ESF pump and valve operation times associated with other ESF Function Response Times are not included in the technical specifications. Allowing the ESF Response Times to be controlled outside of the technical specifications, under 10 CFR 50.59 control eliminates the need for license amendment requests for minor changes that do not meet the threshold for a license amendment under the provisions of 10 CFR 50.59. However, the retention of the valve isolation times (which are part of the ESF Response Time) within the ISTS introduces an unnecessary inconsistency regarding the treatment of Response Time. This inconsistency results in license amendment requests (see Ref.1) that may not have been required if the Response Time for the affected ESF Functions was controlled outside of the technical specifications.

The proposed change, by allowing the valve isolation portion of the Main Steam and Main Feedwater ESF Function Response Times to be controlled outside the technical specifications (in the same manner as all other ESF Response Times) would resolve the inconsistency described above and allow all of the ESF Function Response Times to be treated the same.

10 CFR 50.36(c)(2)(ii) requires that an LCO be established for each item meeting one of the criteria listed within the regulation. The ISTS contains LCOs for both the Main Steam Isolation Valves and the Feedwater System isolation valves. The proposed change does not eliminate the LCOs for these valves. The ISTS LCOs for these valves require the valves to be operable and contain surveillances to confirm the valves are maintained operable. However, 10 CFR 50.36(c)(2)(ii) does not specify the particular requirements or level of detail to be included in the required LCOs. The proposed change removes the detail (i.e., specific valve isolation time) from the surveillances. An example of the NRCs previous approval of the removal of detail from the technical specifications is the NRC SER associated with the BVPS License Amendment numbers 210 (Unit 1) and 88 (Unit 2) issued by NRC letter dated 1/20/98 (Ref.2). The BVPS Amendments implemented Generic Letter (GL) 93-08, "Relocation of Technical Specification Tables of Instrument Response Time Limits" (Ref.3), which allowed the relocation of specific Response Time values from the technical specifications. In the NRC SER associated with the BVPS Amendments, the NRC addressed the technical specification criteria of 10 CFR 50.36. The NRC stated that "The regulation, however, does not specify the particular requirements to be included in the plant TSs." The SER approved the relocation of the specific Response Time values from the technical specifications based on the remaining LCO and surveillance requirements being considered adequate to meet the intent of 10 CFR 50.36(c)(2)(ii). Similar to GL 93-08, an earlier GL, 91-08, "Removal of Component Lists From Technical Specifications," (Ref. 4) allowed the removal of the list of containment Isolation Valves and the associated Isolation time for each valve from the technical specifications. Regarding the removal of the valve isolation times from the technical specifications, GL 91-08 on page 4 of Enclosure 1 stated: "The removal of valve closure times that are included in some plant TS would not alter the TS requirements to verify that valve stroke times are within their limits. Therefore, removal of these closure times is acceptable." This concept is retained in the ISTS Section 3.6 (Containment) which does not contain the containment isolation valve times and by ISTS SR 3.6.3.5 which states: "Verify the isolation time of each automatic power operated containment isolation valve is within limits." The Bases for SR 3.6.3.5 states that; "The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analyses."

The proposed change is consistent with the intent and implementation of the GLs discussed above and with the legal requirements of 10 CFR 50.36. The proposed change adjusts the level of detail in the technical



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specifications but retains the essential requirements that ensure the operability of the affected components consistent with the rest of the ISTS (e.g., in a manner similar to ISTS SR 3.6.3.5 discussed above). Thus, the proposed change improves the internal consistency of the ISTS. The removal of system and component operability details from the technical specifications is not a new concept for the ISTS. The majority of ISTS LCOs simply require the system or component to be operable and the surveillances to verify the component or variable is within limits. The detailed requirements for system or component operability are typically described and controlled outside of the technical specifications.

In addition to the ISTS 3.7.2 and 3.7.3 surveillances to verify operability, it should be noted that the Main Steam and Main Feedwater Isolation valves are subject to periodic testing in accordance with the Inservice Testing (IST) Program. Compliance with the IST Program is required 10 CFR 50.55a and by the ISTS in Section 5.5.8. Failure to meet the applicable ASME valve operability requirements would also result in the affected valves being declared inoperable. As such, the ISTS provides multiple requirements to assure the Main Steam and Main Feedwater Isolation valves are maintained operable.



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## 4.0 TECHNICAL ANALYSIS

The proposed change revises the Improved Standard Technical Specification (ISTS) requirements in ISTS 3.7.2, Main Steam Isolation Valves (MSIVs) and ISTS 3.7.3, Main Feedwater Isolation Valves (MFIVs). The proposed change removes the specific valve isolation time from the associated ISTS Surveillance Requirements (SRs). The bracketed isolation time in the ISTS SRs is replaced with the requirement to verify the valve isolation time is within limits. The specific valve isolation time required to meet the ISTS surveillances would be located outside of the technical specifications in a document subject to control by the 10 CFR 50.59 process.

The affected valve isolation times are important to the safety analyses because they are part of the associated overall ESF Response Time assumed in the safety analyses. However, the individual component actuation times that make up the total ESF Response Time are not modeled in the associated safety analysis. Only the overall or total Response Time is considered in the safety analysis. The NRC has already determined (per Generic Letter 93-08) that the ESF Response Times (which include, by technical specification definition, the associated equipment actuation times) do not need to be in the technical specifications. As such, the removal of the Main Steam and Main Feedwater valve isolation time from the technical specifications is acceptable because this level of detail is not necessary to be included in the technical specifications to provide adequate protection of public health and safety. Similar to how the ESF Response Times are treated, the ISTS continues to retain LCO requirements for the affected valves to be operable and associated SRs to verify the valve isolation times are within limit. Therefore, after the removal of the affected valve isolation times, the ISTS will continue to be in compliance with the technical specification requirements of 10 CFR 50.36(c)(2)(ii). In addition, the ISTS provides further assurance the affected Main Steam and Main Feedwater isolation valves are maintained operable, beyond the specific LCO and SR requirements associated with these valves. ISTS 3.3.2 contains operability requirements for the ESF instrumentation that include surveillances which require the verification of the ESF Response Time (which also includes the affected valve isolation times). Additionally, the affected Main Steam and Main Feedwater valves are subject to periodic testing in accordance with the Inservice Testing (IST) Program. Compliance with the IST Program is required by the ISTS in Specification 5.5.8. Therefore, the retained ISTS requirements continue to provide adequate assurance the affected valves are maintained operable and that the plant will be operated in a safe manner within the bounds of the applicable safety analysis.

The proposed change includes the relocation of the specific valve isolation times to a document outside of the technical specifications that is subject to control by 10 CFR 50.59. This portion of the proposed change will allow the affected valve isolation times to be treated in the same manner as other ESF equipment actuation times and the ESF Response Times. The placement of the valve isolation times in a document subject to control by 10 CFR 50.59 is acceptable because it will assure changes to the valve isolation times will be evaluated and prior NRC review and approval will be obtained when required by 10 CFR 50.59. Thus, the affected Main Steam and Main Feedwater valve isolation times will be subject to the same level of control as currently applicable to all the ESF Response Times.

In summary, the proposed change does not alter the ISTS requirement for the affected Main Steam and Main Feedwater isolation valves to be operable nor does it change the ISTS requirement for the valves to isolate within the required time. As such, the proposed change is acceptable because it does not affect the assumptions of any safety analyses or the ISTS compliance with the requirements of 10 CFR 50.36(c)(2)(ii). The proposed change simply adjusts the level of detail contained in ISTS 3.7.2 and 3.7.3 to be more consistent with the requirements of other ESF equipment required operable in the ISTS. The relocation of the specific valve isolation times to a document subject to control by 10 CFR 50.59 results in the same level of control being applied to these isolation times as is currently applicable to the equally important Reactor Trip System and ESF Response Times as well as the specific operability requirements for other ESF equipment (e.g., Safety Injection pumps and valves) required to be operable by the ISTS. Therefore, the proposed change also improves the consistency of the ISTS with regard to the treatment of specific equipment operability requirements and ESF Response Times.



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## 5.0 REGULATORY ANALYSIS

### 5.1 No Significant Hazards Consideration

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

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

   Response: No.

   The proposed change revises Improved Standard Technical Specification (ISTS) 3.7.2, Main Steam Isolation Valves (MSIVs) and ISTS 3.7.3, titled in NUREG-1430 "[Main Feedwater Stop Valves (MFSVs), Main Feedwater Control Valves (MFCVs), and Associated Startup Feedwater Control Valves (SFCVs)]," in NUREG-1431 "Main Feedwater Isolation Valves (MFIVs), Main Feedwater Regulation Valves (MFRVs), and [associated bypass valves]," and in NUREG-1432 "Main Feedwater Isolation Valves (MFIVs) [and [MFIV] Bypass Valves]." The proposed change removes the specific valve isolation time for the Main Steam and Main Feedwater isolation valves from the associated ISTS Surveillance Requirements (SRs). The specific isolation time in the ISTS SRs is replaced with the requirement to verify the valve isolation time is within limits.

   The Main Steam and Main Feedwater Isolation valves are not an initiator to any accident previously evaluated. As a result, the probability of an accident is not affected. The Main Steam and Main Feedwater isolation valves are assumed to function to mitigate some accidents. The proposed change only affects the level of detail included in the ISTS. The technical specification requirements continue to provide the same level of assurance as before that the specified equipment is capable of performing its intended safety function. The affected equipment will continued to be verified operable in the same manner as before. As such, the proposed change does not affect the ability of the isolaiton valves to perform their assumed mitigation function. 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 ISTS 3.7.2 and ISTS 3.7.3, to remove the specific valve isolation time for the Main Steam and Main Feedwater isolation valves from the associated ISTS Surveillance Requirements (SRs). The specific isolation time in the ISTS SRs is replaced with the requirement to verify the valve isolation time is within limits.

   The proposed change only affects the level of detail included in the ISTS. The technical specification requirements continue to provide the same level of assurance as before that the specified equipment is capable of performing its intended safety function. The affected equipment will continued to be verified operable in the same manner. As such, the proposed change does not involve a modification to the physical configuration of the plant (i.e., no new equipment will be installed) or change in the methods governing normal plant operation. The proposed change will not impose any new or different requirements or introduce a new accident initiator, accident precursor, or malfunction mechanism. Additionally, there is no change in the types or increases in the amounts of any effluent that may be released off-site and there is no increase in individual or cumulative occupational exposure. Therefore, the proposed change does not create the possibility of a new or different kind of accident



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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 ISTS 3.7.2 and ISTS 3.7.3, to remove the specific valve isolation time for the Main Steam and Main Feedwater isolation valves from the associated ISTS Surveillance Requirements (SRs). The specific isolation time in the ISTS SRs is replaced with the requirement to verify the valve isolation time is within limits.

The proposed change only affects the level of detail included in the ISTS. The technical specification requirements continue to provide the same level of assurance as before that the specified equipment is capable of performing its intended safety function. The affected equipment will continued to be verified operable in the same manner as before. As such, the proposed change does not affect the assumptions of any safety analysis or the availability or operability of any plant equipment. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

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

5.2 Applicable Regulatory Requirements/Criteria

The proposed change affects the content of the Improved Standard Technical Specifications (ISTS). 10 CFR 50.36 is the regulation that provides requirements regarding the content of technical specifications. Specifically, 10 CFR 50.36(c)(2)(ii) states that: "A technical specification limiting condition for operation of a nuclear reactor must be established for each item meeting one or more of the following criteria:…." The proposed change affects ISTS 3.7.2 for the Main Steam Isolation Valves (MSIVs) and ISTS 3.7.3 for the Main Feedwater Isolation Valves (MFIVs). These valves have been determined to meet the criteria referred to by 10 CFR 50.36(c)(2)(ii) and consistent with the requirements of 10 CFR 50.36(c)(2)(ii), a limiting condition for operation or LCO has been established for these valves. The proposed change only affects the level of detail included in the ISTS LCO and the level of regulatory control applicable to the details removed from the ISTS. The proposed change makes the level of detail in ISTS 3.7.2 and ISTS 3.7.3 more consistent with other similar ISTS LCOs. The established LCOs remain intact and continue to require the affected valves to be operable in accordance with 10 CFR 50.36(c)(2)(ii). The proposed change does not alter the operability requirements for the affected valves and the valves will continued to be verified operable in the same manner as before. Therefore, the ISTS requirements continue to provide adequate assurance the affected valves are maintained operable and that the plant will be operated in a safe manner within the bounds of the applicable safety analysis.

The proposed change includes the relocation of the specific valve isolation times to a document outside of the technical specifications that is subject to control by 10 CFR 50.59. The placement of the valve isolation times in a document subject to control by 10 CFR 50.59 is acceptable because it will assure changes to the valve isolation times will be evaluated and prior NRC review and approval obtained when required by 10 CFR 50.59.

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



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## 6.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed change would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any 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.

## 7.0 REFERENCES

1. NRC SER for Beaver Valley Power Station (BVPS) Unit 2 Amendment # 137 issued 6/25/03 (TAC NO. MB5686).
2. NRC SER for BVPS License Amendment numbers 210 (Unit 1) and 88 (Unit 2) issued 1/20/98 (TAC NOS. M99671 and M99672).
3. Generic Letter 93-08, "Relocation of Technical Specification Tables of Instrument Response Time Limits," dated 12/29/93.
4. Generic Letter 91-08, "Removal of Component Lists From Technical Specifications," dated 5/6/91.

## Revision History

### OG Revision 0 Revision Status: Closed

Revision Proposed by: Beaver Valley

Revision Description:
Original Issue

### Owners Group Review Information

Date Originated by OG: 02-Aug-05

Owners Group Comments:
(No Comments)

Owners Group Resolution: Approved Date: 02-Aug-05

### TSTF Review Information

TSTF Received Date: 18-Aug-05 Date Distributed for Review: 18-Aug-05

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

TSTF Comments:
(No Comments)



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## OG Revision 0 Revision Status: Closed

TSTF Resolution: Approved Date: 09-Sep-05

### NRC Review Information

NRC Received Date: 13-Sep-05

NRC Comments:

NRC requested that the Bases and the justification be revised to state that the subject valves are also tested in accordance with the Inservice Testing Program.

Final Resolution: Superceded by Revision Final Resolution Date: 12-Oct-05

## TSTF Revision 1 Revision Status: Active

Revision Proposed by: NRC

Revision Description:
Revised the Bases and the justification to state that the subject valves are also tested in accordance with the Inservice Testing Program.

### TSTF Review Information

TSTF Received Date: 12-Oct-05 Date Distributed for Review: 12-Oct-05

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

TSTF Comments:

(No Comments)

TSTF Resolution: Approved Date: 12-Oct-05

### NRC Review Information

NRC Received Date: 13-Oct-05

## Affected Technical Specifications

| | | |
|---|---|---|
| SR 3.7.2.1 | MSIVs | NUREG(s)- 1430 1431 1432 Only |
| SR 3.7.2.1 Bases | MSIVs | NUREG(s)- 1430 1431 1432 Only |
| SR 3.7.3.1 | [MFSVs, MFCVs, and Associated SFCVs] | NUREG(s)- 1430 Only |
| SR 3.7.3.1 Bases | [MFSVs, MFCVs, and Associated SFCVs] | NUREG(s)- 1430 Only |
| SR 3.7.3.1 | MFIVs and MFRVs and [Associated Bypass Valves] | NUREG(s)- 1431 Only |



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| | | |
|---|---|---|
| SR 3.7.3.1 Bases | MFIVs and MFRVs and [Associated Bypass Valves] | NUREG(s)- 1431 Only |
| SR 3.7.3.1 | MFIVs [and [MFIV] Bypass Valves] | NUREG(s)- 1432 Only |
| SR 3.7.3.1 Bases | MFIVs [and [MFIV] Bypass Valves] | NUREG(s)- 1432 Only |



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SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---|---|---|
| SR 3.7.2.1 | ----------NOTE----------<br>Only required to be performed in MODES 1 and 2.<br>----------<br><br>Verify isolation time of each MSIV is ~~≤ [6] seconds~~ within limits. | In accordance with the Inservice Testing Program |
| SR 3.7.2.2 | ----------NOTE----------<br>Only required to be performed in MODES 1 and 2.<br>----------<br><br>Verify each MSIV actuates to the isolation position on an actual or simulated actuation signal. | [18] months |

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---|---|---|
| SR 3.7.3.1 | ----------NOTE----------<br>Only required to be performed in MODES 1 and 2.<br>----------<br><br>Verify the isolation time of each [MFSV], [MFCV], and [SFCV] is ~~≤ [7] seconds~~ within limits. | In accordance with the Inservice Testing Program |
| SR 3.7.3.2 | ----------NOTE----------<br>Only required to be performed in MODES 1 and 2.<br>----------<br><br>Verify each [MFSV], [MFCV], and [SFCV] actuates to the isolation position on an actual or simulated actuation signal. | [18] months |

BASES

ACTIONS (continued)

D.1 and D.2

If the MSIV cannot be restored to OPERABLE status or closed in the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours and in MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from MODE 2 conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.2.1

This SR verifies that MSIV closure time of each MSIV is ~~≤ [6] seconds. The MSIV isolation time is~~ within the limits assumed in the accident and containment analyses and also verifies the valve closure time in accordance with the Inservice Testing Program. This Surveillance is normally performed upon returning the unit to operation following a refueling outage, because the MSIVs should not be tested at power since even a part stroke exercise increases the risk of a valve closure with the unit generating power. As the MSIVs are not to be tested at power, they are exempt from the ASME Code, Section XI (Ref. 5) requirements during operation in MODES 1 and 2.

The Frequency for this SR is in accordance with the Inservice Testing Program.

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

SR 3.7.2.2

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

BASES

ACTIONS (continued)

E.1 and E.2

If the [MFSVs], [MFCVs], and [associated SFCVs] cannot be restored to OPERABLE status, or closed, or isolated within the associated Completion Time, the unit must be in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours and in MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.3.1

This SR verifies that the closure time of each [MFSV], [MFCV], and [associated SFCV] is ~~≤ 7 seconds.~~

~~The [MFSV], [MFCV], and [associated SFCV] isolation time is~~ within the limits assumed in the accident and containment analyses and also verifies the valve closure time in accordance with the Inservice Testing Program. This Surveillance is normally performed upon returning the unit to operation following a refueling outage. The [MFSV], [MFCV], and [associated SFCV] should not be tested at power since even a part stroke exercise increases the risk of a valve closure with the unit generating power. This is consistent with the ASME Code, Section XI (Ref. 2) requirements during operation in MODES 1 and 2.

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

The Frequency for this SR is in accordance with the Inservice Testing Program.

SR 3.7.3.2

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

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

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---|---|---|
| SR 3.7.2.1 | ----------NOTE----------<br>Only required to be performed in MODES 1 and 2.<br>----------<br><br>Verify the isolation time of each MSIV is ~~≤ [4.6] seconds~~within limits. | In accordance with the Inservice Testing Program |
| SR 3.7.2.2 | ----------NOTE----------<br>Only required to be performed in MODES 1 and 2.<br>----------<br><br>Verify each MSIV actuates to the isolation position on an actual or simulated actuation signal. | [18] months |

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---|---|---|
| SR 3.7.3.1 | Verify the isolation time of each MFIV, MFRV[, and associated bypass valve] is ~~≤ [7] seconds~~ within limits. | In accordance with the Inservice Testing Program |
| SR 3.7.3.2 | Verify each MFIV, MFRV[, and associated bypass valves] actuates to the isolation position on an actual or simulated actuation signal. | [18] months |

BASES

ACTIONS (continued)

D.1 and D.2

If the MSIVs cannot be restored to OPERABLE status or are not closed within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed at least in MODE 3 within 6 hours, and in MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from MODE 2 conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.2.1

This SR verifies that MSIV closure time is ~~≤ [4.6] seconds. The MSIV isolation time is~~ within the limits assumed in the accident and containment analyses and also verifies the valve closure time in accordance with the Inservice Testing Program. This Surveillance is normally performed upon returning the unit to operation following a refueling outage. The MSIVs should not be tested at power, since even a part stroke exercise increases the risk of a valve closure when the unit is generating power. As the MSIVs are not tested at power, they are exempt from the ASME Code, Section XI (Ref. 5), requirements during operation in MODE 1 or 2.

The Frequency is in accordance with the Inservice Testing Program.

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

SR 3.7.2.2

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

BASES

ACTIONS (continued)

D.1

With two inoperable valves in the same flow path, there may be no redundant system to operate automatically and perform the required safety function. Although the containment can be isolated with the failure of two valves in parallel in the same flow path, the double failure can be an indication of a common mode failure in the valves of this flow path, and as such, is treated the same as a loss of the isolation capability of this flow path. Under these conditions, affected valves in each flow path must be restored to OPERABLE status, or the affected flow path isolated within 8 hours. This action returns the system to the condition where at least one valve in each flow path is performing the required safety function. The 8 hour Completion Time is reasonable, based on operating experience, to complete the actions required to close the MFIV or MFRV, or otherwise isolate the affected flow path.

E.1 and E.2

If the MFIV(s) and MFRV(s) and the associated bypass valve(s) cannot be restored to OPERABLE status, or closed, or isolated within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours[, and in MODE 4 within 12 hours]. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.3.1

This SR verifies that the closure time of each MFIV, MFRV, and [associated bypass valve] is ~~≤ 7 seconds. The MFIV and MFRV isolation times are~~ within the limits assumed in the accident and containment analyses and also verifies the valve closure time in accordance with the Inservice Testing Program. This Surveillance is normally performed upon returning the unit to operation following a refueling outage. These valves should not be tested at power since even a part stroke exercise increases the risk of a valve closure with the unit generating power. This is consistent with the ASME Code, Section XI (Ref. 2), quarterly stroke requirements during operation in MODES 1 and 2.

The Frequency for this SR is in accordance with the Inservice Testing Program.

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---|---|---|
| SR 3.7.2.1 | ----------NOTE----------<br>Only required to be performed in MODES 1 and 2.<br>----------<br><br>Verify the isolation time of each MSIV is ~~≤ [4.6] seconds~~ within limits. | In accordance with the Inservice Testing Program |
| SR 3.7.2.2 | ----------NOTE----------<br>Only required to be performed in MODES 1 and 2.<br>----------<br><br>Verify each MSIV actuates to the isolation position on an actual or simulated actuation signal. | [18] months |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---|---|---|
| SR 3.7.3.1 | Verify the isolation time of each MFIV [and [MFIV] bypass valve] is ~~≤ [7] seconds~~ within limits. | In accordance with the Inservice Testing Program |
| SR 3.7.3.2 | Verify each MFIV [and [MFIV] bypass valve] actuates to the isolation position on an actual or simulated actuation signal. | [18] months |

BASES

ACTIONS (continued)

D.1 and D.2

If the MSIVs cannot be restored to OPERABLE status, or closed, within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4 within [12] hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from MODE 2 conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.2.1

This SR verifies that the closure time of each MSIV is ~~≤ [4.6] seconds. The MSIV isolation time is~~ within the limits assumed in the accident and containment analyses and also verifies the valve closure time in accordance with the Inservice Testing Program. This SR is normally performed upon returning the unit to operation following a refueling outage. The MSIVs should not be tested at power since even a part stroke exercise increases the risk of a valve closure with the unit generating power. As the MSIVs are not tested at power, they are exempt from the ASME Code, Section XI (Ref. 5), requirements during operation in MODES 1 and 2.

The Frequency for this SR is in accordance with the Inservice Testing Program.

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

SR 3.7.2.2

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

BASES

ACTIONS (continued)

C.1 and [C.2]

If the MFIVs and their bypass valves cannot be restored to OPERABLE status, closed, or isolated in the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours[, and in MODE 4 within [12] hours]. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.3.1

This SR ensures the verification of each MFIV [and [MFIV] bypass valve] is ~~≤ [7] seconds. The MFIV isolation time is~~ within the limits assumed in the accident and containment analyses and also verifies the valve closure time in accordance with the Inservice Testing Program. This Surveillance is normally performed upon returning the unit to operation following a refueling outage. The MFIVs should not be tested at power since even a part stroke exercise increases the risk of a valve closure with the unit generating power. As these valves are not tested at power, they are exempt from the ASME Code, Section XI (Ref. 2) requirements during operation in MODES 1 and 2.

The Frequency is in accordance with the Inservice Testing Program.

SR 3.7.3.2

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

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

REFERENCES

1. FSAR, Section [10.4.7].

2. ASME, Boiler and Pressure Vessel Code, Section XI, Inservice Inspection, Article IWV-3400.