

Industry/TSTF Standard Technical Specification Change Traveler

Separate closure time testing and actuation signal testing for MSIVs and Feedwater Isolation Valves

Priority/Classification 1) Correct Specifications

NUREGs Affected: 1430 1431 1432 1433 1434

Description:

SR 3.7.2.1 and SR 3.7.3.1 are revised to separate the closure time testing and the actuation signal testing into separate surveillances.

Justification:

SR 3.7.2.1 and SR 3.7.3.1 require that the closure time for the MSIV or Main Feedwater Isolation Valves be verified utilizing an actual or simulated actuation signal. The Frequency is bracketed, and is either "In accordance with the Inservice Testing Program" or "[18] months".

These Surveillances are actually two tests: verification that the valves close on an actual or simulated actuation signal and verification of the valve closure time. The IST program specifies the frequency of the closure time measurement, but not of the actuation test. If the closure time test is failed, it should not be necessary to repeat the actuation signal test. Therefore, the Surveillances are split into two Surveillances. One test verifies the closure time and is performed at a Frequency specified in the Inservice Testing Program. The other Surveillance verifies that the valve closes on an actuation signal. That test is performed every [18] months.

This change will eliminate unnecessary testing and make clear the proper Frequency for performance of the tests. Appropriate Bases changes were also made.

Revision History

OG Revision 0

Revision Status: Active

Next Action: NRC

Revision Proposed by: Byron/Braidwood

Revision Description:

Original Issue

Owners Group Review Information

Date Originated by OG: 19-Nov-96

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 19-Nov-96

TSTF Review Information

TSTF Received Date: 22-Nov-96 Date Distributed for Review 06-Jan-98

OG Review Completed: BWO WOG CEOG BWROG

TSTF Comments:

Originally distributed on 4/8/97

CEOG Comments from 4/24/97: Applicable, accepts.

2/5/98 - Add Note of SR 3.7.2.1 and SR 3.7.2.2 and revise Bases. Applicable to PWRs.

TSTF Resolution: Approved Date: 05-Feb-98

5/22/98

Insert 1 (BWO/WOG/CEOG)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.

Insert 2 (BWO/WOG)SR 3.7.3.2

This SR verifies that each [MFSV, MFCV, and associated SFCVs] 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.

Insert 3 (WOG)SR 3.7.3.2

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

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

Insert 4 (CEOG)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.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.2.1 -----NOTE----- Only required to be performed in MODES 1 and 2.</p> <p>Verify closure^{isolation} time of each MSIV is \leq [6] seconds on an actual or simulated actuation signal.</p>	<p>In accordance with the Inservice Testing Program OK [18] months</p>

SR 3.7.2.2 -----NOTE-----
Only required to be performed in MODES 1 and 2.

Verify each MSIV actuates to the isolation position on an actual or simulated actuation signal.

[18] months

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One [SFCV] in one or more flow paths inoperable.	C.1 Close or isolate [SFCV]. <u>AND</u> C.2 Verify [SFCV] is closed or isolated.	[8 or 72] hours Once per 7 days
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. <u>AND</u> E.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.3.1 -----NOTE----- Only required to be performed in MODES 1 and 2. Verify the <u>isolation</u> closure time of each [MFSV], [MFCV], and [SFCV] is \leq [7] seconds <u>on an actual or simulated actuation signal</u> .	In accordance with the <u>Inservice Testing Program</u> <u>or [18] months</u>

SR 3.7.3.2 -----NOTE----- Only required to be performed in MODES 1 and 2. Verify each [MFSV], [MFCV], and [SFCV] actuates to the isolation position on an actual or simulated actuation signal.	[18] months
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BWOG STS

3.7-8

Rev 1, 04/07/95

BASES

ACTIONS

C.1 and C.2 (continued)

OPERABLE status or closed. When closed, the MSIVs are already in the position required by the assumptions in the safety analysis.

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

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

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 on an actual or simulated actuation signal. The MSIV closure time is assumed in the accident and containment analyses. 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

isolation

(continued)

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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.7.2.1 (continued)

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~~ or [18] months]. The [18] month frequency to demonstrate the valve closure time 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, the Frequency is acceptable from a reliability standpoint.

This test is conducted in MODE 3, with the unit at operating temperature and pressure, as discussed in the Reference ~~exercising requirements~~. 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.

INSEAT 1 →

REFERENCES

1. FSAR, Section [10.3].
 2. FSAR, Section [6.2].
 3. FSAR, Section [15.4].
 4. 10 CFR 100.11.
 5. ASME, Boiler and Pressure Vessel Code, Section XI.
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BASES (continued)

SURVEILLANCE
REQUIREMENTS

SR 3.7.3.1

This SR verifies that the closure time of each [MFSV], [MFCV], and [associated SFCV] is ≤ 7 seconds ~~or an actual or simulated actuation signal).~~

isolation

The [MFSV], [MFCV], and [associated SFCV] ~~closure~~ time is assumed in the accident and containment analyses. 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 or [18] months]. The Frequency of [18] months for valve closure time is based on the refueling cycle. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency.~~

INSERT.2 →

REFERENCES

1. FSAR, Section [10.4.7].
2. ASME, Boiler and Pressure Vessel Code, Section XI.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition C not met.	D.1 Be in MODE 3.	6 hours
	<u>AND</u> D.2 Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.2.1</p> <p>----- NOTE ----- Only required to be performed in MODES 1 and 2.</p> <p>----- Verify closure ^{the isolation} time of each MSIV is \leq [4.6] seconds on an actual or simulated actuation signal.</p>	<p>In accordance with the Inservice Testing Program or [18] months</p>

SR 3.7.2.2

----- NOTE -----
Only required to be performed in MODES 1 and 2.

Verify each MSIV actuates to the isolation position on an actual or simulated actuation signal.

[18] months

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more [MFRV or preheater] bypass valves inoperable.	C.1 Close or isolate bypass valve. AND C.2 Verify bypass valve is closed or isolated.	[72] hours Once per 7 days
D. Two valves in the same flow path inoperable.	D.1 Isolate affected flow path.	8 hours
E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3. AND E.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.3.1 Verify the ^{isolation} closure time of each MFIV, MFRV [, and associated bypass valve] is \leq [7] seconds on an actual or simulated actuation signal.	In accordance with the Inservice Testing Program or [18] months

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

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BASES

ACTIONS

C.1 and C.2 (continued)

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

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

D.1 and D.2

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

SURVEILLANCE
REQUIREMENTSSR 3.7.2.1

isolation →

This SR verifies that MSIV closure time is \leq [4.6] seconds ~~on an actual or simulated actuation signal~~. The MSIV closure time is assumed in the accident and containment analyses. 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.

(continued)

BASES

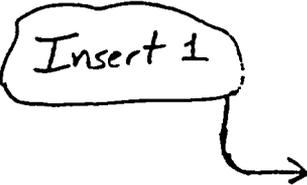
SURVEILLANCE
REQUIREMENTS

SR 3.7.2.1 (continued)

The Frequency is in accordance with the ~~(Inservice Testing Program or [18] months)~~. The ~~[18] month~~ Frequency for valve closure time 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, the Frequency is acceptable from a reliability standpoint.

This test is conducted in MODE 3 with the unit at operating temperature and pressure, ~~as discussed in Reference 5~~ ~~exercising requirements~~. 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.

Insert 1



REFERENCES

1. FSAR, Section [10.3].
 2. FSAR, Section [6.2].
 3. FSAR, Section [15.1.5].
 4. 10 CFR 100.11.
 5. ASME, Boiler and Pressure Vessel Code, Section XI.
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BASES

ACTIONS
(continued)

E.1 and E.2

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

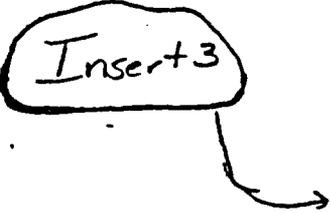
SURVEILLANCE
REQUIREMENTS

SR 3.7.3.1

This SR verifies that the closure time of each MFIV, MFRV, and associated bypass valves is ≤ 7 seconds ~~on an actual or simulated actuation signal~~. The MFIV and MFRV ~~closure~~ times are assumed in the accident and containment analyses. This Surveillance is normally performed upon returning the unit to operation following a refueling outage. These valves ~~isolation~~ 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 or [18] months~~. The ~~[18] month~~ Frequency for valve closure is based on the refueling cycle. Operating experience has shown that these components usually pass the surveillance when performed at the ~~[18] month~~ Frequency.

Insert 3



REFERENCES

1. FSAR, Section [10.4.7].
 2. ASME, Boiler and Pressure Vessel Code, Section XI.
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SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.2.1 -----NOTE----- Only required to be performed in MODES 1 and 2.</p> <p>Verify closure ^{the isolation} time of each MSIV is \leq [4.6] seconds on an actual or simulated actuation signal.</p>	<p>In accordance with the Inservice Testing Program or [18] months</p>

SR 3.7.2.2 -----NOTE-----
Only required to be performed in MODES 1 and 2.

Verify each MSIV actuates to the isolation position on an actual or simulated actuation signal.

[18] months

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours
	AND C.2 Be in MODE 4.	[12] hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.3.1 Verify the <u>closure</u> time of each MFIV [and [MFIV] bypass valve] is \leq [7] seconds <u>on an actual or simulated actuation signal</u> .	In accordance with the <u>Inservice Testing Program</u> or [18] months



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)

C.1, C.2.1, and C.2.2

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

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

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

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

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 \leq [4.6] seconds ~~on an actual or simulated activation signal~~. The MSIV ~~closure~~ isolation time is assumed in the accident and containment analyses. This SR is normally performed upon returning the unit to operation following a refueling

(continued)

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SURVEILLANCE
REQUIREMENTS

SR 3.7.2.1 (continued)

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~~ or [18] months]. This [18] month frequency demonstrates the valve closure time at least once per refueling cycle. Operating experience has shown that these components usually pass the SR when performed at the [18] month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

This test is conducted in MODE 3, with the unit at operating temperature and pressure, ~~as discussed in the Reference 5~~ ~~exercising requirements~~. 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.

INSERT 1 →

REFERENCES

1. FSAR, Section [10.3].
2. FSAR, Section [6.2].
3. FSAR, Section [15.1.5].
4. 10 CFR 100.11.
5. ASME, Boiler and Pressure Vessel Code, Section XI, Inservice Inspection, Article IWV-3400.

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ACTIONS

B.1 (continued)

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, valves in each flow path must be restored to OPERABLE status, closed, or the 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 to close the MFIV or its bypass valve, or otherwise isolate the affected flow path.

Inoperable MFIVs and [MFIV] bypass valves that cannot be restored to OPERABLE status within the Completion Time, but are closed or isolated, must be verified on a periodic basis that they are closed or isolated. This is necessary to ensure that the assumptions in the safety analysis remain valid. The 7 day Completion Time is reasonable, based on engineering judgment, in view of valve status indications available in the control room, and other administrative controls to ensure that these valves are closed or isolated.

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 \leq [7] seconds ~~on an actual or simulated~~

(continued)

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SURVEILLANCE
REQUIREMENTS

SR 3.7.3.1 (continued)

isolation

~~(actuation signal)~~. The MFIV ~~closure~~ time is assumed in the accident and containment analyses. 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 for [18] months)~~. The ~~[18] month Frequency for valve closure time is based on the refueling cycle. Operating experience has shown that these components usually pass the SR when performed at the [18] month Frequency.~~

INSERT 4

REFERENCES

1. FSAR, Section [10.4.7].
2. ASME, Boiler and Pressure Vessel Code, Section XI, Inservice Inspection, Article IWV-3400.