Industry/TSTF Standard Technical Specification Change Traveler

Surveillance Requirement for ASME Section XI Pumps

Priority/Classification 2) Consistency/Standardization

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

Description:

The description of the Surveillance Requirements for the various ASME Section XI pumps is inconsistent. This change proposes to revise the SR for the ECCS pumps (HPSI and LPSI) and the Containment Spray Pump to be consistent with the Auxiliary Feedwater Pump Surveillance Requirement by removing the specific differential pressure limit. The change removes the quantitative values of the required differential pressure and relocates it to the Inservice Testing Program.

Justification:

The ASME Section XI Inservice Test (IST) Program contains adequate controls for testing pump performance. Flow and differential pressure are parameters identified in the IST Program. The ECCS and Containment Spray pump Surveillances are being made consistent with the Surveillances for the Auxiliary Feedwater Pump. The changes to the ECCS and Containment Spray Surveillances are also consistent with NUREG-1431, Rev. 1.

Revision History

OG Revision 0 Revision Status: Active Next Action:

Revision Proposed by: Palo Verde

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 14-Mar-96

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 14-Mar-96

TSTF Review Information

TSTF Received Date: 12-Apr-96 Date Distributed for Review 12-Apr-96

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

TSTF Comments:
NA WOG, BWOG, BWRs

TSTF Resolution: Approved Date: 14-May-96

NRC Review Information

NRC Received Date: 17-Jul-96 NRC Reviewer: R. Giardina

NRC Comments:
9/18/96 - Approved

Final Resolution: NRC Approves Final Resolution Date: 18-Sep-96

Incorporation Into the NUREGs

File to BBS/LAN Date: TSTF Informed Date: TSTF Approved Date:

NUREG Rev Incorporated:

Affected Technical Specifications

SR 3.5.2.4	ECCS - Operating
SR 3.6.6B.5	Containment Spray and Cooling Systems (Atmospheric and Dual)
SR 3.6.6A.5	Containment Spray and Cooling Systems (Atmospheric and Dual)
SR 3.6.6B.5 Bases	Containment Spray and Cooling Systems (Atmospheric and Dual)
SR 3.6.6A.5 Bases	Containment Spray and Cooling Systems (Atmospheric and Dual)

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6A.2	Operate each containment cooling train fan unit for ≥ 15 minutes.	31 days
SR 3.6.6A.3	Verify each containment cooling train cooling water flow rate is ≥ [2000] gpm to each fan cooler.	31 days
SR 3.6.6A.4	Verify the containment spray piping is full of water to the [100] ft level in the containment spray header.	31 days
SR 3.6.6A.5	Verify each containment spray pump's [develops ≥ [250] psid differential pressure on recirculation flow].	In accordance with the Inservice Testing Program
SR 3.6.6A.6	Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[18] months
SR 3.6.6A.7	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	[18] months
SR 3.6.6A.8	Verify each containment cooling train starts automatically on an actual or simulated actuation signal.	[18] months

developed head at the flow test point is greater than or equal to the required developed head.

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SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6B.1	Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	31 days
SR 3.6.6B.2	Operate each containment cooling train fan unit for ≥ 15 minutes.	31 days
SR 3.6.6B.3	Verify each containment cooling train cooling water flow rate is ≥ [2000] gpm to each fan cooler.	31 days
[SR 3.6.6B.4	Verify the containment spray piping is full of water to the [100] ft level in the containment spray header.	31 days]
SR 3.6.6B.5	Verify each containment spray pump's [develops ≥ [250] psid differential pressure on recirculation flow].	In accordance with the Inservice Testing Program
SR 3.6.6B.6	Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to its correct position on an actual or simulated actuation signal.	[18] months

developed head at the flow test point is greater than or equal to the required developed head.

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SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.2.1	Verify the following valves are in the listed position with power to the valve operator removed [and key locked in position]. Valve Number / Position / Function [ ] / [ ] / [ ] [ ] / [ ] / [ ] . / . / . . / . / . . / . / . [ ] / [ ] / [ ]	12 hours
SR 3.5.2.2	Verify each ECCS manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.5.2.3	Verify ECCS piping is full of water.	31 days
SR 3.5.2.4	Verify the following ECCS pumps develop the required differential pressure on recirculation flow. Pump / Differential Pressure, psid HPSI[a] / ≥ [1600] LPSI[b] / ≥ [300]	In accordance with the Inservice Testing Program

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(a) high pressure safety injection
(b) low pressure safety injection

Verify each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head.

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.6A.3 (continued)

redundancy, and the low probability of a significant degradation of flow occurring between surveillances.

SR 3.6.6A.4

Verifying that the containment spray header piping is full of water to the [100] ft level minimizes the time required to fill the header. This ensures that spray flow will be admitted to the containment atmosphere within the time frame assumed in the containment analysis. The 31 day Frequency is based on the static nature of the fill header and the low probability of a significant degradation of water level in the piping occurring between surveillances.

at the flow test point is greater than or equal to the pump's developed head required developed head ensures

SR 3.6.6A.5

Verifying that each containment spray ~~pump develops~~ ~~≥ [250] psid differential pressure on recirculation~~ ensures that spray pump performance has not degraded during the cycle. Flow and differential pressure are normal tests of centrifugal pump performance required by Section XI of the ASME Code (Ref. 6). Since the containment spray pumps cannot be tested with flow through the spray headers, they are tested on recirculation flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such inservice inspections confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. The Frequency of this SR is in accordance with the Inservice Testing Program.

SR 3.6.6A.6 and SR 3.6.6A.7

These SRs verify that each automatic containment spray valve actuates to its correct position and that each containment spray pump starts upon receipt of an actual or simulated actuation signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The [18] month Frequency is based on the need to perform these Surveillances under the conditions that apply during a plant

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BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.6B.5

Verifying that each containment spray ~~pump develops ≥ [250] psid differential pressure on recirculation~~ ensures that spray pump performance has not degraded during the cycle. Flow and differential pressure are normal tests of centrifugal pump performance required by Section XI of the ASME Code (Ref. 6). Since the containment spray pumps cannot be tested with flow through the spray headers, they are tested on recirculation flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such inservice inspections confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. The Frequency of this SR is in accordance with the Inservice Testing Program.

at the flow test point is greater than or equal to the required developed head ensures pump's developed head

SR 3.6.6B.6 and SR 3.6.6B.7

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

The surveillance of containment sump isolation valves is also required by SR 3.5.2.5. A single surveillance may be used to satisfy both requirements.

SR 3.6.6B.8

This SR verifies each containment cooling train actuates upon receipt of an actual or simulated actuation signal. The [18] month Frequency is based on engineering judgment and has been shown to be acceptable through operating

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