Industry/TSTF Standard Technical Specification Change Traveler

Relaxed Surveillance Frequency for Excess Flow Check Valve Testing

Classification: 3) Improve Specifications

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

Description:

Surveillance Requirement 3.6.1.3.10 (NUREG-1433) requires verification of the actuation capability of each reactor instrumentation line Excess Flow Check Valve (EFCV) every [18] months. This proposed change is to relax the requirement to test every EFCV, by allowing a representative sample of EFCVs to be tested every [18] months, such that all EFCVs will be tested at least once every 10 years (nominal). The proposed change is similar to existing performance-based testing programs, such as Inservice Testing (snubbers) and Option B to 10 CFR 50 Appendix J. As added assurance of detecting any potential common failure modes, the representative sample will be comprised of the various configurations, model types, sizes and operating environments of EFCVs in the plant.

Justification:

A review of industry operating experience demonstrates that EFCVs are highly reliable and that the incidence of test failures is extremely low. Given the large number of EFCVs that are currently required to be tested each Refuel Outage (typically 100), a significant cost and dose savings can be achieved by the proposed relaxation of the testing frequency without any reduction in overall safety or reliability. The Bases change includes a commitment to evaluate any failure to isolate for the need to expand the tested population in that test interval.

(Note: Some plants may require an Inservice Testing Program Relief Request pursuant to 10 CFR 50.55a in order to implement this proposed change.)

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Revision History

OG Revision 0 Revision Status: Closed

Revision Proposed by: Duane Arnold

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 09-Feb-99

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 09-Feb-99

TSTF Review Information

TSTF Received Date: 16-Mar-99 Date Distributed for Review

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: 06-May-99

NRC Review Information

NRC Received Date: 23-Jun-99

NRC Comments:

12/14/99 - NRC has questions. BWROG to respond.
1/10/00 - GE responded to NRC.
3/7/2000 - NRC Tech Staff is revising the NRC SE for the GE Topical. NRC to inform the TSTF of the revised SE.
3/9/2000 - NRC provided comments.

Final Resolution: Superceded by Revision Final Resolution Date: 14-Apr-00

TSTF Revision 1 Revision Status: Active Next Action: NRC

Revision Proposed by: NRC

Revision Description:
Revised to address NRC comments. Added NRC proposed Insert (new Insert 3) which addresses the requirements for adopting the proposed changes including the selection of performance criteria, and references the Topical Report.

TSTF Review Information

TSTF Received Date: 14-Apr-00 Date Distributed for Review 14-Apr-00

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

TSTF Comments:
(No Comments)

TSTF Resolution: Approved Date: 20-Jul-00

NRC Review Information

NRC Received Date: 20-Jul-00

NRC Comments:
(No Comments)

Final Resolution: NRC Action Pending Final Resolution Date:

Incorporation Into the NUREGs

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

NUREG Rev Incorporated:

Affected Technical Specifications

SR 3.6.1.3.10 PCIVs

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INSERT 1

[The representative sample consists of an approximately equal number of EFCVs, such that each EFCV is tested at least once every 10 years (nominal). In addition, the EFCVs in the sample are representative of the various plant configurations, models, sizes and operating environments. This ensures that any potentially common problem with a specific type or application of EFCV is detected at the earliest possible time.]

INSERT 2

[The nominal 10 year interval is based on other performance-based testing programs, such as Inservice Testing (snubbers) and Option B to 10 CFR 50, Appendix J. Furthermore, any EFCV failures will be evaluated to determine if additional testing in that test interval is warranted to ensure overall reliability is maintained. Operating experience has demonstrated that these components are highly reliable and that failures to isolate are very infrequent. Therefore, testing of a representative sample was concluded to be acceptable from a reliability standpoint.]

INSERT 3

[---------- REVIEWER'S NOTE ----------
The Surveillance is only allowed for those plants for which NEDO-32977-A, "Excess Flow Check Valve Testing Relaxation," June 2000, is applicable. In addition, the licensee must develop EFCV performance criteria and basis to ensure that their corrective action program can provide meaningful feedback for appropriate corrective actions. The EFCV performance criteria and basis must be found acceptable by the technical staff. If required, an Inservice Testing Program relief request pursuant to 10 CFR 50.55a needs to be approved by the Technical Staff in order to implement this Surveillance. Otherwise, each EFCV shall be verified to activate on an [18] month Frequency. The bracketed portions of these Bases implement NEDO-32977-A.
----------]

TSTF-334, Rev 1

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.7	----------NOTE---------- [Only required to be met in MODES 1, 2 and 3.] ---------- Perform leakage rate testing for each primary containment purge valve with resilient seals.	184 days AND Once within 92 days after opening the valve
SR 3.6.1.3.8	Verify the isolation time of each MSIV is ≥ [2] seconds and ≤ [8] seconds.	[In accordance with the Inservice Testing Program or 18 months]
SR 3.6.1.3.9	Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal.	[18] months
SR 3.6.1.3.10	Verify each [a representative sample of] reactor instrumentation line EFCV actuates [on a simulated instrument line break to restrict flow to ≤ 1 gph].	[18] months
SR 3.6.1.3.11	Remove and test the explosive squib from each shear isolation valve of the TIP System.	[18] months on a STAGGERED TEST BASIS

---- Reviewer's Note ----
The bracketed portion of the SR is applicable to plants adopting NEDO-32977-A.

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.3.9

Automatic PCIVs close on a primary containment isolation signal to prevent leakage of radioactive material from primary containment following a DBA. This SR ensures that each automatic PCIV will actuate to its isolation position on a primary containment isolation signal. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.6.3.7 overlaps this SR to provide complete testing of the safety function. The [18] month Frequency was developed considering it is prudent that this Surveillance be performed only during a unit outage since isolation of penetrations would eliminate cooling water flow and disrupt the normal operation of many critical components. Operating experience has shown that these components usually pass this Surveillance when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

Insert 3

SR 3.6.1.3.10

[a representative sample of]

This SR requires a demonstration that each reactor instrumentation line excess flow check valve (EFCV) is OPERABLE by verifying that the valve [reduces flow to ≤ 1 gph on a simulated instrument line break]. This SR provides assurance that the instrumentation line EFCVs will perform so that predicted radiological consequences will not be exceeded during the postulated instrument line break event evaluated in Reference 6. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass this Surveillance when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

Insert 1

Insert 2

SR 3.6.1.3.11

The TIP shear isolation valves are actuated by explosive charges. An in place functional test is not possible with this design. The explosive squib is removed and tested to provide assurance that the valves will actuate when

(continued)