

Exelon In-Service Testing

Supplemental Position Indication Relief Request

**NRC Pre-Application Meeting
November 18, 2019**



Exelon Generation®

Purpose

Brief the NRC on proposed Inservice Testing Relief Request for Exelon NPPs that are currently on or going to the 2012 Edition of the OM Code in 2020 by covering the following:

- **Modification of Supplemental Position Indication (SPI) testing requirement or frequency based on valve risk ranking**
- **Extension of SPI testing frequency for valves that have seat leakage testing frequency governed by an alternate NRC approved process**

Agenda

- **Current In Service Test SPI requirement**
- **SPI Hardships**
- **Overview of the proposed Relief Request**
- **The Process for SPI Risk Ranking**
- **Summary**
- **Precedent**
- **Conclusion and Relief Request Submittal**

Current In Service Test SPI Requirement

10CFR50.55a(b)(3)(xi) states that licensees shall verify that valve operation is accurately indicated by supplementing valve position indicating lights with other indications, such as flow meters or other suitable instrumentation, to provide assurance of proper obturator position. The NRC is requiring this condition for the implementation of the 2012 Edition of the OM Code. The Code requires SPI testing to be performed once every two (2) years.

Exelon is requesting relief from the Regulation and Code requirement of performing SPI once every two (2) years.

This Regulation and Code requirement is more restrictive than prior code requirements or Exelon IST standards. Implementation of this condition for all required valves creates a hardship without a compensating increase in the level of quality and safety. 10 CFR 50.55a(z)(2)

Supplemental Position Indication Hardships

Examples of SPI Hardships:

- Altered plant start-up sequence
- Non-typical system alignments and system alignment that cause inoperability
- Temporary removal of missile and security barriers
- Release of contaminated fluids during high pressure system venting
- Conflicts with Divisional Outage Strategy
- Creating an evolution with the potential to drain the vessel

Overview of the Proposed Relief Request

SPI requirements or frequency will be adjusted based on two methodologies:

- 1. Component risk ranking results will dictate alternate SPI requirement or frequency.**
- 2. SPI crediting seat leakage testing to prove closure follows NRC approved performance based frequencies (Appendix J and PIV testing).**

Relief does NOT apply to Anchor Darling Double Disc Gate Valves or Active MOVs tested in accordance with the Code Mandatory Appendix III.

The Process – SPI Risk Ranking

SPI Component Risk Ranking

- **Consequence of failure ranked Low, Medium or High:**
 - Determined via quantitative means when available (PRA or 50.69 as applicable)
 - Determined via qualitative means such as Maintenance Rule Expert Panel if not modeled
- **Susceptibility of failure – Specifically stem-to-disc separation based on:**
 - Part 21s past or present and actions taken to address
 - Failures as identified via Industry OE and Site OE
 - Site review of valve performance and design

Note: Susceptibility will be continuously evaluated as new data becomes available

The Process - SPI Risk Ranking

The proposed Risk Rank SPI process provides an acceptable level of quality and safety by:

- 1. Only relaxing the testing requirement or frequency if the risk consequence or susceptibility to stem-to-disc separation are acceptably low**
- 2. Applying predefined criteria for hardship in extending the test frequency.**

Use governance to determine SPI testing hardships.

- Examples include, but are not limited to:**
 - The potential to cause personal injury**
 - Significant increase in dose or the spread of radioactivity**
 - Potential to change reactivity**
 - System inoperability specifically for SPI testing**
 - Creating a potential to drain the vessel**
 - Lifting leads, breaking air fitting, pulling fuses or any other activity that disrupts logic or motive force**
 - Increasing the probability of failure of other components**
 - Removal of missile barriers or security barriers**

Summary

SPI frequency and testing relief will reduce the hardship while maintaining the level of quality and safety:

- **SPI testing effort will be focused on the most critical components susceptible to failure**
- **SPI testing will be commensurate with component risk**
- **Alternate required IST testing prescribed to detect and monitor component degradation remain unchanged**
- **Reduction in the potential to create undue risk to the plant, components or personnel**
- **Preserve divisional outage strategy which reduces outage risk by maintaining one division/train operational**

Precedent

- **APS - Palo Verde Nuclear Generating Station submitted a Relief Request for an alternative SPI frequency requesting that valves subject to seat leakage testing follow the 10 CFR 50 Appendix J performance based test frequencies**

Conclusion and Relief Request Submittal

Conclusion – Exelon is requesting relief from the Regulation and Code requirement of performing SPI once every 2 years. This test requirement created a hardship without a compensating increase in the level of quality and safety.

Submittal to include one (1) Corporate Relief Request to modify the SPI testing interval from its current two (2) year frequency to the proposed Risk Rank test requirements and NRC approved seat leakage performed based frequencies.

Submittal is planned for December 2019.

Questions?

