



SNC Pre-Submittal Meeting Regarding a Reactor Coolant System Pressure Isolation Valve (PIV) Technical Specification License Amendment Request and PIV Performance Based Leakage Testing Alternative In Accordance with the Inservice Testing Program (IST) at Vogtle Electric Generating Plant – Units 1 and 2

December 1, 2022



Meeting Purpose and Agenda



- The purpose for this meeting is to discuss proposed license amendment request (LAR) to revise Vogtle Technical Specification (TS) Surveillance Requirement (SR) 3.4.14.1 to implement PIV testing in accordance with the IST Program.
- In addition to the LAR, SNC intends to submit a proposed Alternative to the requirements of ASME OM Code Section ISTC-3522, "Category C Check Valves," and Subsection ISTC-3630(a) under Section ISTC-3630, to implement performance-based PIV testing.

Meeting Purpose and Agenda



- This meeting will cover the following topics:
 - Background
 - Proposed License Amendment Request
 - Proposed License Amendment Justification
 - Proposed Alternative and Technical Bases
 - Schedule

The image features a complex, abstract background composed of several overlapping geometric shapes in various shades of gray. The shapes include triangles, rectangles, and trapezoids, creating a layered, three-dimensional effect. The word "Background" is written in a bold, dark gray sans-serif font, positioned on the left side of the image, partially overlapping the geometric shapes.

Background

Background



- TS SR 3.4.14.1 for Vogtle provides details of the inservice testing requirements and frequencies for PIV testing.
 - In accordance with the INSERVICE TESTING PROGRAM, and
 - 18 months

AND

- Prior to entering MODE 2 whenever the unit has been in MODE 5 for 7 days or more, if leakage testing has not been performed in the previous 9 months (except for valves HV- 8701A/B and HV-8702A/B)

AND

- For systems rated at less than 50% RCS design pressure, within 24 hours following valve actuation (except for valves HV-8701A/B and HV-8702A/B).

Proposed License Amendment Request

Proposed License Amendment Request



Reason for the change

- Revises the surveillance frequency of TS 3.4.14, RCS Pressure Isolation Valve (PIV) Leakage, Surveillance Requirement (SR) 3.4.14.1 to allow the reactor coolant system pressure isolation valve (PIV) leakage tests to be performed in accordance with the IST PROGRAM.
- The proposed change would remove restrictive and duplicative Surveillance Frequency requirements from VEGP's TS pertaining to verification that RCS PIV leakage testing results are within the allowable range.

Proposed License Amendment Request



SURVEILLANCE REQUIREMENTS	
SURVEILLANCE	FREQUENCY
<p>SR 3.4.14.1</p> <p>-----NOTES-----</p> <ol style="list-style-type: none"> 1. Not required to be performed in MODES 3 and 4. 2. Not required to be performed on the RCS PIVs located in the RHR flow path when in the shutdown cooling mode of operation. 3. RCS PIVs actuated during the performance of this Surveillance are not required to be tested more than once if a repetitive testing loop cannot be avoided. <p>-----</p> <p>Verify leakage from each RCS PIV is equivalent to ≤ 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm at an RCS pressure ≥ 2215 psig and ≤ 2255 psig.</p>	<p>In accordance with the INSERVICE TESTING PROGRAM, and 18 months</p> <p><u>AND</u></p>

Proposed License Amendment Request (continued)



	<p>Prior to entering MODE 2 whenever the unit has been in MODE 5 for 7 days or more, if leakage testing has not been performed in the previous 9 months (except for valves HV-8701A/B and HV-8702A/B)</p> <p><u>AND</u></p> <p>(continued)</p>
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SURVEILLANCE REQUIREMENTS	
SURVEILLANCE	FREQUENCY
<p>SR 3.4.14.1 (continued)</p>	<p>For systems rated at less than 50% RCS design pressure, within 24 hours following valve actuation (except for valves HV-8701A/B and HV-8702A/B).</p>



Proposed License Amendment Justification

Proposed License Amendment Justification



- The performance history for those valves subject to PIV testing over the previous 10 plus years has shown excellent performance.
- There have been zero PIV test failures during this time period.
- In removing the Frequency requiring performance of leakage testing within 24 hours following valve actuation due to automatic or manual action or flow through the valves, VEGP will instead test at a Frequency in accordance with the IST Program.
- Leakage testing of the RCS PIVs at the frequency established by the IST Program is satisfactory for determining valve integrity, particularly as it relates to operational readiness.

Proposed License Amendment Justification - Precedent



- Furthermore, this change in frequency would also align with the corresponding
 - SR 3.4.5.1 in NUREG-1433, “Standard Technical Specifications – General Electric BWR [Boiling Water Reactor]/4 Plants,”
 - SR 3.4.6.1 in NUREG-1434, “Standard Technical Specifications – General Electric BWR/6 Plants,” and
 - SR 3.4.15.1 in NUREG-2194, “Standard Technical Specifications – Westinghouse Advanced Passive 1000 (AP1000) Plants.”

The background consists of several overlapping, semi-transparent gray geometric shapes. On the left, a large triangle points downwards. In the center, a vertical rectangle is partially overlapped by a larger, lighter gray shape. On the right, a large, solid gray rectangle is positioned. The overall composition is abstract and modern.

Proposed Alternative and Technical Bases

Proposed Alternative and Technical Bases



- ASME OM Code-2004 Edition with Addenda through OMB-2006, is the applicable Code for the VEGP 4th 10-Year interval ending 05-31-2027.
- In accordance with 10 CFR 50.55a, "Codes and standards," paragraph (z)(1), "Alternatives to codes and standards requirements," SNC proposes an alternative to the requirements of ASME OM Code Section ISTC-3522, "Category C Check Valves," and Subsection ISTC-3630(a) under Section ISTC-3630, "Leakage Rate for Other Than Containment Isolation Valves," for the subject pressure isolation valves (PIVs).
 - ISTC-3630 requires testing to verify seat leakage within acceptable limits for Category A valves, other than containment isolation valves.
 - ISTC-3630(a) requires this testing at least once every two years.
 - ISTC-3522 states that each check valve exercise test shall include open and close tests. [Closure tests may utilize PIV leak testing]

Proposed Alternative and Technical Bases



- Approval of this alternative will allow PIV testing to be performed at Vogtle Units 1 and 2 on a performance-based frequency. The proposed 10 CFR 50.55a(z)(1) alternative will provide for more efficient plant operation and lower cumulative radiation exposure (CRE), while maintaining an acceptable level of quality and safety.

Proposed Alternative and Technical Bases



- The performance-based testing will be implemented as identified in Nuclear Energy Institute (NEI) Topical Report (TR) NEI 94-01, “Industry Guideline for Implementing Performance-Based Option of 10 CFR 50, Appendix J,” Revision 3-A, dated July 2012.
- PIV test performances would occur at a nominal frequency ranging from every refueling outage to every fourth refueling outage, subject to acceptable valve performance. Valves that have demonstrated good performance for two consecutive cycles may have their test interval extended up to 75-months, with a permissible extension (for non-routine emergent conditions) of nine months (84 months total).

Proposed Alternative and Technical Bases



- Precedence
 - Several recently approved alternatives to allow PIV testing under a performance-based testing approach similar to that established under 10 CFR 50, Appendix J, Option B are listed below:
 - Grand Gulf Nuclear Station, Unit 1, October 2021, ML21294A067
 - River Bend Station, Unit 1, September 2022, ML22265A180
 - Limerick Generating Station, Units 1 and 2, October 2019, ML19228A195
 - LaSalle County Station, Units 1 and 2, September 2019, ML19217A306



Schedule

Schedule



- Submit LAR for TS SR 3.4.14.1 and the Alternative to the requirements of ASME OM Code Section ISTC-3522, "Category C Check Valves," and Subsection ISTC-3630(a) under Section ISTC-3630, "Leakage Rate for Other Than Containment Isolation Valves," – 1st Quarter 2023
- Request approval – 1 year from acceptance

The background consists of several overlapping geometric shapes in various shades of gray. A large, light gray shape is on the left, partially overlapping a darker gray shape. To the right, there is a large, solid medium-gray shape. The bottom right corner features a dark gray triangle pointing towards the center, overlapping a light gray shape. The overall composition is minimalist and modern.

Questions?