Edward Casulli Site Vice President Susquehanna Nuclear, LLC 769 Salem Boulevard Berwick, PA 18603 Tel. 570.542.3795 Fax 570.542.1504 Edward.Casulli@talenenergy.com



August 14, 2023

Attn: Document Control Desk U. S. Nuclear Regulatory Commission Washington, DC 20555-0001

SUSQUEHANNA STEAM ELECTRIC STATION PROPOSED RELIEF FOR VALVE 251130 PLA-8080

ML13347B233).

10 CFR 50.55a

Docket No. 50-388

References: 1) Susquehanna letter to NRC, "Revised Proposed Relief Requests for the Fourth Ten-Year Inservice Testing Interval for Susquehanna Units 1 and 2 (PLA-7120)," dated December 12, 2013 (ADAMS Accession No.

- 2) NRC letter to Susquehanna, "Relief Requests for the Fourth 10-Year Inservice Testing Interval (TAC Nos. MF2905 through MF2912 and MF2915)," dated May 22, 2014 (ADAMS Accession No. ML14122A197).
- Susquehanna letter to NRC, "Proposed Relief Request for the Fifth 10-Year Inservice Test Program Interval (PLA-8074)," dated August 03, 2023 (ADAMS Accession No. ML23215A173).

Pursuant to 10 CFR 50.55a(z)(1), Susquehanna Nuclear, LLC (Susquehanna), in Reference 1, requested NRC approval of the proposed alternative to the American Society of Mechanical Engineers (ASME) Operation and Maintenance of Nuclear Power Plants Code (OM Code) test requirements for pressure isolation valves in the Susquehanna Steam Electric Station (SSES) Fourth 10-Year Inservice Test (IST) Program Interval. Specifically, Relief Request RR-02 proposed alternatives to the ASME OM Code to revise pressure isolation valve leak test frequency consistent with 10 CFR 50, Appendix J, Option B, for the affected components. Relief Request RR-02 was approved by Reference 2. In accordance with 10 CFR 50.55a(z)(2), Susquehanna is requesting relief consistent with Relief Request RR-02 for the Unit 2 Residual Heat Removal Cross-Connect Check Valve, 251130, which was inadvertently excluded from the Reference 1 request.

The SSES Fourth 10-Year IST Program Interval began on June 1, 2014, and is currently scheduled to end May 31, 2024. This request is for the remainder of the Fourth 10-Year IST Program Interval. A consistent request for the Fifth 10-Year IST Program Interval was made in Reference 3.

The exclusion of the Unit 2 Residual Heat Removal Cross-Connect Check Valve, 251130, was identified following the 2023 SSES Unit 2 Refueling and Inspection Outage. Due to the timing of the issue identification and hardship that would be associated with performing the leak test, Susquehanna requests authorization of the proposed relief prior to October 09, 2023.

There are no new or revised commitments contained in this submittal.

Should you have any questions regarding this submittal, please contact Ms. Melisa Krick, Manager – Nuclear Regulatory Affairs, at (570) 542-1818.

MTCH

E. Casulli

Enclosure: Relief Request for Valve 251130

Copy: NRC Region I Mr. C. Highley, NRC Senior Resident Inspector Ms. A. Klett, NRC Project Manager Mr. M. Shields, PA DEP/BRP **Enclosure to PLA-8080**

Relief Request for Valve 251130

Relief Request for Valve 251130

Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(ii) and 10 CFR 50.55a(z)(2)

Note: The request herein is to apply relief to the Unit 2 Residual Heat Removal Cross-Connect Check Valve, 251130, (referred to hereafter as Valve 251130) consistent with Relief Request RR-02 which was previously submitted and approved in References 1 and 2, respectively. No other changes are proposed.

1. <u>ASME Code Component(s) Affected</u>

Component ID	Valve Type	<u>System</u>	Code Class	Category
Valve 251130	Check	Residual Heat Removal	1	A/C

This valve is a Category A/C Pressure Isolation Valve (PIV) for the Residual Heat Removal (RHR) system for Susquehanna Steam Electric Station (SSES) Unit 2. Valve 251130 was installed in 2007 and is a 1" check valve that prevents over pressurization of the low-pressure piping between the Emergency Core Cooling System and Reactor Coolant System boundaries. Consistent with Technical Specification (TS) Limiting Condition of Operation 3.4.5, "Reactor Coolant System Pressure Isolation Valve Leakage," Valve 251130 is identified as a PIV and is leak rate tested in accordance with American Society of Mechanical Engineers (ASME) Operation and Maintenance of Nuclear Power Plants Code (OM Code) Subsection ISTC-3630, "Leakage Rate for Other Than Containment Isolation Valves."

Susquehanna Nuclear, LLC (Susquehanna), submitted Relief Request RR-02 for the SSES Fourth 10-Year Inservice Test (IST) Program Interval in December 2013, as noted in Reference 1. Valve 251130 was inadvertently omitted from this relief request. Since installation in 2007, with the exception of 2017¹, a test frequency of two (2) years has been applied to the valve in accordance with the current frequency specified by the Inservice Testing Program for TS Surveillance Requirement (SR) 3.4.5.1. The testing prescribed by TS SR 3.4.5.1 cannot be performed online and is scheduled coincident with Unit 2 refuel outages since Valve 251130 is located inside the inerted primary containment. Susquehanna typically performs this testing with the unit in cold shutdown and the reactor head removed and connected to the fuel pools. Achieving this configuration in a forced outage represents a significant hardship for Susquehanna.

Valve 251130 was last leak rate tested on April 10, 2021, but was not tested during the subsequent 2023 refueling outage. Applying the 25% grace allowance permitted by TS

¹ TS SR 3.4.5.1 for Valve 251130 was not performed in the 2017 Unit 2 refueling outage. As permitted by TS SR 3.0.3, the surveillance was performed within twenty-four (24) months following the missed surveillance (i.e., 2019 Unit 2 refueling outage). The 2019 performance of TS SR 3.4.5.1 demonstrated acceptable valve performance; refer to Table 1 below. This condition is entered in the station Corrective Action Program.

SR 3.0.2, the test missed in the 2023 refueling outage will be due by October 09, 2023, unless relief is applied.

2. Applicable Code Edition and Addenda

ASME OM Code 2004 Edition through 2006 Addenda

3. Applicable Code Requirement

ASME OM Code Subsection ISTC-3630 states, "Category A valves with a leakage requirement not based on an Owner's 10 CFR 50, Appendix J program, shall be tested to verify their seat leakages within acceptable limits. Valve closure before seat leakage testing shall be by using the valve operator with no additional closing force applied." ASME OM Code Subsection ISTC-3630(a), "Frequency," states, "Tests shall be conducted at least once every 2 years."

4. <u>Reason for Request</u>

Pursuant to 10 CFR 50.55a, "Codes and standards," paragraph (z)(2), Susquehanna requests relief on the basis that performance of TS SR 3.4.5.1 for Valve 251130 prior to expiration of the surveillance would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Since Valve 251130 was omitted from Reference 1, it is tested on a two-year frequency, consistent with TS SR 3.4.5.1 and ISTC-3630, coincident with the Unit 2 refueling outages². However, this surveillance was erroneously missed during the 2023 Unit 2 refueling outage. Upon identification of the missed surveillance, the issue was entered in the station Corrective Action Program. Applying the 25% grace allowance permitted by TS SR 3.0.2, the test missed in the 2023 refueling outage will be due by October 09, 2023, unless relief is applied.

Unit 2's next refueling outage is currently scheduled for Spring 2025 and there are no scheduled shutdowns meeting the parameters of the test prior to the expiration of the surveillance on October 09, 2023. Additionally, performing a mid-cycle outage meeting the testing prerequisites (e.g., cold shutdown with reactor head removed and alternative means of decay heat available) would result in unnecessary plant movement and personnel dose exposure to perform a surveillance that otherwise would have been extended based on historical valve performance if Relief Request RR-02 had previously been applied to Valve 251130.

² TS SR 3.4.5.1 for Valve 251130 was not performed in the 2017 Unit 2 refueling outage. As permitted by TS SR 3.0.3, the surveillance was performed within twenty-four (24) months following the missed surveillance (i.e., 2019 Unit 2 refueling outage). The 2019 performance of TS SR 3.4.5.1 demonstrated acceptable valve performance; refer to Table 1 below. This condition is entered in the station Corrective Action Program.

An alternative is proposed to the testing requirements of ASME OM Code ISTC-3630(a) for Valve 251130 on the basis that the alternative testing would provide an acceptable level of quality and safety. The proposed alternative testing was previously requested and approved in References 1 and 2, respectively, for similar valves. The request herein is to apply relief to Valve 251130 consistent with previously approved Relief Request RR-02 on the basis that Valve 251130 is consistent with those valves already approved to use the relief.

5. <u>Proposed Alternative and Basis for Use</u>

The proposed alternative testing was previously requested and approved in References 1 and 2, respectively, for similar valves. The request herein is to apply relief to Valve 251130 consistent with previously approved Relief Request RR-02 on the basis that Valve 251130 is consistent with those valves already approved to use the relief.

Susquehanna proposes to perform PIV leak rate testing at intervals ranging from every refueling outage to every third refueling outage. The specific interval would be a function of the valve's performance and would be established in a manner consistent with the containment isolation valve (CIV) process under 10 CFR 50, Appendix J, Option B (referred to hereafter as Option B) program guidance. The test frequency will be established such that if Valve 251130 were to fail its leak rate test, the test interval will be reduced to once every twenty-four (24) months until the valve can be reclassified as a good performer per the performance evaluation requirements of Option B. The test intervals for Valve 251130 will be determined in a similar manner as is done for CIV testing under Option B. The test interval may be extended upon completion of two consecutive periodic PIV tests with results within prescribed acceptance criteria. Any PIV test failure will require a return to the initial interval until good performance can again be established.

The extension of test frequencies will be consistent with the guidance provided for Appendix J Type C leak rate tests as detailed in paragraph 10.2.3.2, "Extended Test Interval," of NEI 94-01, as described in Reference 1.

The justification for the proposed alternative testing is the historically good performance of Valve 251130. Table 1 below presents test data that demonstrate acceptable historical performance of Valve 251130. This table also documents the historical performance of the similar Unit 1 valve (i.e., Unit 1 Residual Heat Removal Cross-Connect Check Valve, 151130). Note that Valve 151130 was installed in 2016, whereas Valve 251130 was installed in 2007.

Table 1: Leakage History of Valves 151130 and 251130					
Valve ID	<u>Test Date</u>	<u>Measured Value</u> (gallons per minute)	<u>Leakage Limit</u> (gallons per minute)		
151130	04/07/2016	0.002	≤ 0.5		
151130	04/19/2018	0.000	≤ 0.5		
151130	04/14/2020	0.032	≤ 0.5		
151130	04/16/2022	Would not pressurize	≤ 0.5		
151130	04/19/2022	0.000	≤ 0.5		
251130	03/26/2007	0.170	≤ 0.5		
251130	05/07/2009	0.000	≤ 0.5		
251130	04/24/2011	0.000	≤ 0.5		
251130	05/09/2013	Would not pressurize	≤ 0.5		
251130	05/11/2013	0.000	≤ 0.5		
251130	05/10/2015	0.000	≤ 0.5		
251130	04/12/2019	0.012	≤ 0.5		
251130	04/10/2021	0.000	≤ 0.5		

Therefore, Susquehanna requests relief on the basis that the alternative testing would provide an acceptable level of quality and safety as detailed herein and in References 1 and 2 and on the basis that shutting down solely to perform the surveillance would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

6. <u>Duration of Proposed Alternative</u>

The proposed alternative will be utilized for the remainder of the Fourth 10-Year IST Program Interval, which began on June 1, 2014, and is currently scheduled to end May 31, 2024.

Note that a consistent request for the Fifth 10-Year IST Program Interval was made in Reference 3.

7. <u>Precedent</u>

- Letter from M. Markley (NRC) to C. R. Pierce (Southern Nuclear Operating Company, Inc.), "Edwin I. Hatch Nuclear Plant, Units 1 and 2 – Inservice Testing Program Relief Request and Alternatives for Pumps and Valves – Fifth Ten-Year Interval (CAC Nos. MF6238, MF6239, MF6240, MF6241, MF6242, MF6243, MF6244, MF6245, MF6246, and MF6247)," dated December 30, 2015 (ADAMS Accession No. ML15310A406)
- Letter from D. J. Wrona (NRC) to B. C. Hanson (Exelon Generation Company, LLC), "LaSalle County Station, Units 1 and 2 - Relief from the Requirements of the ASME Code for Operation and Maintenance of Nuclear Power Plants (EPID L-2018-LLR-0004)," dated July 3, 2018 (ADAMS Accession No. ML18163A054)
- Letter from L. M. Regner (NRC) to P. Fessler (DTE Electric Company), "Fermi 2 Proposed Alternative to the Required Examination Associated with Valves (EPID L-2019-LLR-0047 and EPID L-2019-LLR-0050)," dated October 3, 2019 (ADAMS Accession No. ML19248C707)
- Letter from J. G. Danna (NRC) to D. P Rhoades (Constellation Energy Generation, LLC), "Nine Mile Point Nuclear Station, Unit 2 – Relief Request Associated with Excess Flow Check Valves (EPID L-2021-LLR-0066)," dated March 11, 2022 (ADAMS Accession No. ML22061A040)

8. <u>References</u>

- Letter from J. A. Franke (PPL Susquehanna, LLC) to NRC, "Revised Proposed Relief Requests for the Fourth Ten-Year Inservice Testing Interval for Susquehanna Units 1 and 2 (PLA-7120)," dated December 12, 2013 (ADAMS Accession No. ML13347B233)
- Letter from M. K. Khanna (NRC) to T. S. Rausch (PPL Susquehanna, LLC), "Relief Requests for the Fourth 10-Year Inservice Testing Interval (TAC Nos. MF2905 through MF2912 and MF2915)," dated May 22, 2014 (ADAMS Accession No. ML14122A197)
- 3. Letter from E. Casulli (Susquehanna Nuclear, LLC) to NRC, "Proposed Relief Request for the Fifth 10-Year Inservice Test Program Interval (PLA-8074)," dated August 03, 2023 (ADAMS Accession No. ML23215A173)
- 4. NEI 94-01, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," Revision 3-A, dated July 2012