

10 CFR 50.55a(z)(2)

June 25, 2024

RS-24-066

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001Byron Station, Unit 2
Renewed Facility Operating License No. NPF-66
NRC Docket No. 50-455

Subject: Inservice Testing Interval Extension for Essential Service Water Valves Due to Required use of Containment Chiller

Constellation Energy Generation, LLC (CEG) is requesting a temporary testing frequency extension for Byron Station, Unit 2 (Byron) inservice testing of the Essential Service Water (SX) System Air Operated Valves (AOVs). Attached is the proposed temporary alternative Inservice Testing Interval extension for Byron SX Air Operated Valves' Inservice Testing (IST).

The Byron 2A Containment (VP) Chiller was removed from service for scheduled preventative maintenance on March 31, 2024; additional work scope was identified during the initial return to service including leak repairs, seal replacements and a stator replacement. With the 2A chiller removed from service, the station has had to rely on the 2B VP Chiller for Unit 2 containment atmospheric cooling.

An SX surveillance test (ST) for three (3) SX AOVs will expire at 2359 on Wednesday, June 26, 2024. The proposed alternative affects AOVs tested by 2BOSR 0.5-3.SX.1-2, "Test of the 2B Essential Service Water Miscellaneous System Valves." 2BOSR 0.5-3.SX.1-2 satisfies the American Society of Mechanical Engineers (ASME) Operation and maintenance Code (OM Code) quarterly IST requirements for AOVs 2SX112B, 2SX114B, and 2SX147B. The 2A VP Chiller has not been available due to an extended emergent work window. As such, the requirement to secure the 2B VP Chiller to perform testing per 2BOSR 0.5-3.SX.1-2, combined with the decision to defer maintenance due to grid risk with current hot weather alerts in the region, and unnecessarily starting the 4th Reactor Containment Fan Cooler (RCFC) for containment temperature control with no VP chiller running, increases the risk and potential to exceed the containment temperature limit in Technical Specification (TS) 3.6.5, "Containment Air Temperature," and potentially declaring Unit 2 Containment inoperable. This would require entering an 8-hour shutdown Required Action. Challenging unit output during grid alert conditions compounds the impact of a potential TS-driven shutdown to the electrical grid. Therefore, CEG proposes an alternative for a one-time extension of the IST requirements for the 3 AOVs until after the 2A VP Chiller is returned to operable but no later than July 19, 2024. Accordingly, CEG is requesting approval of this alternative on an expedited basis to prevent a required shutdown condition.

Due to the urgent nature of this situation, CEG is requesting approval of the attached proposed alternative by 2300 on June 26, 2024. Attachment 1 contains the details supporting the proposed alternative.

There are no regulatory commitments in this submittal. Should you have any questions concerning this letter, please contact Ms. Lisa Zurawski at 779-231-6196.

Respectfully,

Steinman,
Rebecca Lee

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Attachments: 1. Request for Relief - Proposed Alternative in Accordance with
10 CFR 50.55a(z)(2) Associated with Essential Service Water Inservice
Testing Interval Extension
2. 2BOSR 0.5-3.SX.1-2.BY01, Revision 1, Acceptance Criteria Data
Sheet

cc: NRC Regional Administrator – Region III
NRC Senior Resident Inspector – Byron Station
NRC Project Manager – Byron Station
Illinois Emergency Management Agency and Office of Homeland Security - Division
of Nuclear Safety

ATTACHMENT 1

Request for Relief - Proposed Alternative in Accordance with 10 CFR 50.55a(z)(2) Associated with Essential Service Water Inservice Testing Interval Extension

1. ASME Code Component(s) Affected

The proposed alternative affects Air Operated Valves (AOVs) tested by 2BOSR 0.5-3.SX.1-2, "Test of the 2B Essential Service Water Miscellaneous System Valves." 2BOSR 0.5-3.SX.1-2 satisfies the American Society of Mechanical Engineers (ASME) Operation and maintenance Code (OM Code) quarterly exercise, fail-safe and stroke time test requirements for AOVs 2SX112B, 2SX114B, and 2SX147B. Table 1 summarizes the code classification for the valves for which an alternative is being requested.

Table 1

Component	Description	Code Class	Category
2SX112B	CONTAINMENT CHILLER SX SUPPLY VALVE	3	B
2SX114B	CONTAINMENT CHILLER SX RETURN VALVE	3	B
2SX147B	ESW RCFC RETURN PRESSURE CONTROL VALVE	3	B

2. Applicable Code Edition and Addenda

American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code), 2004 Edition including addenda through OMB-2006.

3. Applicable Code Requirement

ASME OM Code, 2004 Edition including addenda through OMB-2006. An alternative is specifically requested for ISTC-3521 Exercise Testing, ISTC-3560 Fail-Safe Testing and ISTC-5131 valve stroke testing requirement for 2SX112B, 2SX114B, and 2SX147B.

4. Reason for Request

Constellation Energy Generation, LLC (CEG) is requesting a temporary testing frequency extension for Byron Station (Byron) inservice testing of the Essential Service Water (SX) System Air Operated Valves (AOVs).

To perform this surveillance and test the AOVs listed in Table 1, the 2B Containment (VP) Chiller must be shut down. However, with the 2A VP Chiller currently undergoing maintenance, the B-train chiller must be relied upon for containment cooling.

The required IST testing window of the AOVs will expire at 2359 on Wednesday, June 26, 2024. This is the late date, including 25% grace, to maintain compliance with ASME OM code and Code Case OMN-20.

With the 2A VP Chiller unavailable due to emergent work, shutting down the 2B VP chiller would cause Byron Unit 2 to lose atmospheric cooling. Therefore, CEG proposes this alternative for a one-time extension of SX AOV IST testing until after the 2A VP Chiller is available but no later than July 19, 2024. Accordingly, CEG is requesting approval of this alternative on an expedited basis for the IST program to maintain compliance.

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This alternative is being proposed because of the hardship of a potential for an unnecessary shutdown. With loss of atmospheric cooling within containment to perform the testing, there is an increased risk to all systems inside containment and increased risk for a unit shutdown. A loss of containment cooling combined with the currently predicted hot weather, the 4th Reactor Containment Fan Cooler (RCFC) will require an unnecessary start, increasing the risk and potential to exceed the limit in Technical Specification 3.6.5, "Containment Air Temperature."

CEG proposes this alternative under 10 CFR 50.55a(z)(2) that, with the current plant configuration of the 2A Containment Chiller unavailable, it poses a hardship or unusual difficulty without compensating increase in level of quality or safety to conduct the SX AOV IST in accordance with their current testing frequency.

5. Proposed Alternative and Basis for Use

CEG is proposing an alternative associated with performing the identified SX AOV testing in accordance with 10 CFR 50.55a(z)(2) on the basis that compliance results in hardship or unusual difficulty without a compensating increase in level of quality or safety during the short duration of restoring 2A VP Chiller to operable status. CEG proposes a one-time extension to the IST Program 3-month intervals for IST testing the subject SX AOVs.

The SX system provides cooling to the VP Chillers, which provide cooling to the chill water system for maintaining containment cooling during non-emergency conditions. Performing valve testing on the SX system requires shutting down the associated train's VP chiller to prevent the chiller from tripping on loss of cooling flow.

The Byron 2A Containment (VP) Chiller was removed from service for scheduled preventative maintenance on March 31, 2024, additional work scope was identified during the initial return to service including leak repairs, seal replacements and a stator replacement. Troubleshooting and maintenance on the Byron 2A VP Chiller has been continuously performed since that time and will continue until the chiller is returned to an operable status. CEG is requesting an extension of the specified SX AOV IST tests so that the 2B VP Chiller will not be required to be shut down while the 2A VP Chiller is inoperable, which would increase risk for an unnecessary shutdown.

The required inservice testing consisting of exercise, fail-safe and valve stroke testing are satisfied by performing a stroke time test. A history of the IST performance of the SX AOV stroke times is described in Tables 2 through 4 below. This testing history provides reasonable assurance that the AOVs are currently operable and ready to perform their safety function in the very unlikely occurrence they are needed to perform their safety functions. The data in Tables 2, 3, and 4 shows that for each valve, stroke time testing was completed satisfactorily over the past two years. Based on this test history, CEG concludes that the proposed alternative is acceptable and the extension of the SX AOV stroke time testing will not result in an adverse consequence to safety.

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Table 2

Exam Date	2SX112B		Acceptance Criteria ¹
3/3/2024	Stroke Time Closed	4.91	2.5 to 7.5
11/13/2023	Stroke Time Closed	4.62	2.5 to 7.5
9/11/2023	Stroke Time Closed	5.05	2.5 to 7.5
5/23/2023	Stroke Time Closed	5.06	2.5 to 7.5
3/22/2023	Stroke Time Closed	4.96	2.5 to 7.5
12/21/2022	Stroke Time Closed	4.93	2.5 to 7.5
10/21/2022	Stroke Time Closed	4.65	2.5 to 7.5
6/24/2022	Stroke Time Closed	4.69	2.5 to 7.5
3/23/2022	Stroke Time Closed	4.72	2.5 to 7.5

Table 3

Exam Date	2SX114B		Acceptance Criteria
3/3/2024	Stroke Time Closed	4.00	2.1 to 6.3
11/13/2023	Stroke Time Closed	3.84	2.1 to 6.3
9/11/2023	Stroke Time Closed	4.13	2.1 to 6.3
5/23/2023	Stroke Time Closed	4.03	2.1 to 6.3
3/22/2023	Stroke Time Closed	4.09	2.1 to 6.3
12/21/2022	Stroke Time Closed	3.97	2.1 to 6.3
10/21/2022	Stroke Time Closed	3.75	2.1 to 6.3
6/24/2022	Stroke Time Closed	4.00	2.1 to 6.3
3/23/2022	Stroke Time Closed	4.03	2.1 to 6.3

Table 4

Exam Date	2SX147B		Acceptance Criteria
3/3/2024	Stroke Time Open	2.82	1.3 to 3.8
11/13/2023	Stroke Time Open	2.75	1.3 to 3.8
9/11/2023	Stroke Time Open	2.71	1.3 to 3.8
5/23/2023	Stroke Time Open	2.84	1.3 to 3.8
3/22/2023	Stroke Time Open	2.78	1.3 to 3.8
12/21/2022	Stroke Time Open	2.83	1.3 to 3.8
10/21/2022	Stroke Time Open	2.85	1.3 to 3.8
6/24/2022	Stroke Time Open	2.91	1.3 to 3.8
3/23/2022	Stroke Time Open	2.88	1.3 to 3.8

¹ Attachment 2, 2BOSR 0.5-3.SX.1-2.BY01 Acceptance Criteria Data Sheet

ATTACHMENT 1

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Additionally, no deficiencies, adverse trends or open maintenance work orders were identified that would impact or degrade the performance capability and thus exclude the AOVs from this proposed alternative. Each AOV in the scope of this alternative is currently on a standard testing interval with acceptable performance. Considering the current acceptable performance through proven test results, there is reasonable assurance that each component will continue to be capable of performing its design function during the extended interval requested per this proposed alternative.

In conclusion, extending the one-time testing frequencies of the SX AOV IST in the scope of this proposed alternative to after the 2A VP Chiller is determined operable but no later than July 19, 2024, would not adversely impact the function of the AOVs, the essential service water system, the chilled water system, nor result in a reduction in plant safety. In the current plant configuration with the 2A VP Chiller inoperable, performing the SX AOV required testing results in hardship because both Unit 2 containment chillers would be inoperable at the same time, providing unnecessary risk to containment and increase risk of an unnecessary shutdown, without providing a substantive increase in level of quality of the SX AOVs.

6. Duration of Proposed Alternative

This submittal requests a one-time IST Program testing interval extension of IST requirements for 2SX112B, 2SX114B, and 2SX147B until after the 2A VP Chiller is returned to operable but no later than July 19, 2024.

7. Precedent

None

8. References

None

2BOSR 0.5-3.SX.1-2.BY01
Revision 1

Acceptance Criteria Data Sheet

Reason for executing surveillance:

- Post Maintenance Test: NWR(s): _____
- Normal Schedule
- Other: _____

¢ The observed stroke times meet the Acceptance Criteria when they are within the range of the Administrative Stroke Limits.

Valve Number	Stroke Direction	Observed Time (Sec)	Administrative Stroke Limit (Sec)	Applicable LCOAR (Admin Limit)	Maximum Stroke Limit (Sec)	Applicable LCOAR (Max Limit)
2SX112B	Closed		2.5 – 7.5	0BOL IST1	10.0	2BOL 6.6 2BOL 7.8
2SX114B	Closed		2.1 – 6.3	0BOL IST1	8.4	2BOL 6.6 2BOL 7.8
2SX147B	Open		1.3 – 3.8	0BOL IST1	5.0	2BOL 6.6 2BOL 7.8
2SX169B	Open		1.5 – 4.4	0BOL IST1	5.8	2BOL 7.8

Valve Number	Stroke Direction	Reference Stroke Time	Valve Number	Stroke Direction	Reference Stroke Time
2SX112B	Closed	5.0	2SX114B	Closed	4.2
2SX147B	Open	2.5	2SX169B	Open	2.9

(Final)