



Constellation Energy Generation, LLC (CEG)  
Byron Station  
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Byron, IL 61010-9794  
[www.constellationenergy.com](http://www.constellationenergy.com)

September 5, 2024

10CFR50.73

LTR: BYRON 2024-0047  
File: 1D.101  
5A.108

United States Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Byron Station, Units 1 and 2  
Renewed Facility Operating License No. NPF-37 and NPF-66  
NRC Docket No. STN 50-454

Subject: Licensee Event Report (LER) No. 454-2024-001 "Both Trains of Control Room Ventilation Temperature Control System Inoperable"

Enclosed is Byron Station Licensee Event Report (LER) No. 454-2024-001 regarding both trains of Control Room Ventilation Temperature Control System inoperable. This condition is being submitted in accordance with 10 CFR 50.73, "Licensee Event Report System."

There are no regulatory commitments in this report.

Should you have any questions concerning this submittal, please contact Ms. Zoe Cox, Regulatory Assurance Manager, at (779) 231-6606.

Respectfully,

A handwritten signature in black ink, appearing to read "S. Harvey".

Shane Harvey  
Plant Manager  
Byron Generating Station

SH/DG/hh

Enclosure: LER 454-2024-001

cc: Regional Administrator – NRC Region III  
NRC Senior Resident Inspector – Byron Generating Station



## LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)  
 (See NUREG-1022, R.3 for instruction and guidance for completing this form  
<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/>)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Library, and Information Collections Branch (T-6 A10M), U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by email to Infocollects.Resource@nrc.gov, and the OMB reviewer at OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street NW, Washington, DC 20503. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

|   |  |  |  |  |   |                              |                   |
|---|--|--|--|--|---|------------------------------|-------------------|
| 1. Facility Name<br>Byron Station, Unit 1 |  |  |  |  | <input checked="" type="checkbox"/> 050 | 2. Docket Number<br>05000454 | 3. Page<br>1 OF 3 |
|---|--|--|--|--|---|------------------------------|-------------------|

|   |  |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|
| 4. Title<br>Both Trains of Control Room Ventilation Temperature Control System Inoperable |  |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|

| 5. Event Date |     |      | 6. LER Number |                   |              | 7. Report Date |     |      | 8. Other Facilities Involved           |   |                           |
|---------------|-----|------|---------------|-------------------|--------------|----------------|-----|------|--|---|---------------------------|
| Month         | Day | Year | Year          | Sequential Number | Revision No. | Month          | Day | Year | Facility Name<br>Byron Station, Unit 2 | <input checked="" type="checkbox"/> 050 | Docket Number<br>05000455 |
| 07            | 07  | 2024 | 2024          | - 001 -           | 00           | 09             | 05  | 2024 | Facility Name<br>N/A                   | <input type="checkbox"/> 052            | Docket Number<br>N/A      |

|                        |  |  |                        |  |  |
|------------------------|--|--|------------------------|--|--|
| 9. Operating Mode<br>1 |  |  | 10. Power Level<br>100 |  |  |
|------------------------|--|--|------------------------|--|--|

|   |  |  |  |   |  |   |  |   |  |                                     |  |
|---|--|--|--|---|--|---|--|---|--|-------------------------------------|--|
| 11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: (Check all that apply) |  |  |  |   |  |   |  |   |  |                                     |  |
| 10 CFR Part 20  |  | <input type="checkbox"/> 20.2203(a)(2)(vi) |  | 10 CFR Part 50                              |  | <input type="checkbox"/> 50.73(a)(2)(ii)(A)           |  | <input type="checkbox"/> 50.73(a)(2)(viii)(A) |  | <input type="checkbox"/> 73.1200(a) |  |
| <input type="checkbox"/> 20.2201(b)   |  | <input type="checkbox"/> 20.2203(a)(3)(i)  |  | <input type="checkbox"/> 50.36(c)(1)(i)(A)  |  | <input type="checkbox"/> 50.73(a)(2)(ii)(B)           |  | <input type="checkbox"/> 50.73(a)(2)(viii)(B) |  | <input type="checkbox"/> 73.1200(b) |  |
| <input type="checkbox"/> 20.2201(d)   |  | <input type="checkbox"/> 20.2203(a)(3)(ii) |  | <input type="checkbox"/> 50.36(c)(1)(ii)(A) |  | <input type="checkbox"/> 50.73(a)(2)(iii)             |  | <input type="checkbox"/> 50.73(a)(2)(ix)(A)   |  | <input type="checkbox"/> 73.1200(c) |  |
| <input type="checkbox"/> 20.2203(a)(1)  |  | <input type="checkbox"/> 20.2203(a)(4)     |  | <input type="checkbox"/> 50.36(c)(2)        |  | <input type="checkbox"/> 50.73(a)(2)(iv)(A)           |  | <input type="checkbox"/> 50.73(a)(2)(x)       |  | <input type="checkbox"/> 73.1200(d) |  |
| <input type="checkbox"/> 20.2203(a)(2)(i)   |  | 10 CFR Part 21                             |  | <input type="checkbox"/> 50.46(a)(3)(ii)    |  | <input type="checkbox"/> 50.73(a)(2)(v)(A)            |  | 10 CFR Part 73                                |  | <input type="checkbox"/> 73.1200(e) |  |
| <input type="checkbox"/> 20.2203(a)(2)(ii)  |  | <input type="checkbox"/> 21.2(c)           |  | <input type="checkbox"/> 50.69(g)           |  | <input type="checkbox"/> 50.73(a)(2)(v)(B)            |  | <input type="checkbox"/> 73.77(a)(1)          |  | <input type="checkbox"/> 73.1200(f) |  |
| <input type="checkbox"/> 20.2203(a)(2)(iii)   |  |  |  | <input type="checkbox"/> 50.73(a)(2)(i)(A)  |  | <input type="checkbox"/> 50.73(a)(2)(v)(C)            |  | <input type="checkbox"/> 73.77(a)(2)(i)       |  | <input type="checkbox"/> 73.1200(g) |  |
| <input type="checkbox"/> 20.2203(a)(2)(iv)  |  |  |  | <input type="checkbox"/> 50.73(a)(2)(i)(B)  |  | <input checked="" type="checkbox"/> 50.73(a)(2)(v)(D) |  | <input type="checkbox"/> 73.77(a)(2)(ii)      |  | <input type="checkbox"/> 73.1200(h) |  |
| <input type="checkbox"/> 20.2203(a)(2)(v)   |  |  |  | <input type="checkbox"/> 50.73(a)(2)(i)(C)  |  | <input type="checkbox"/> 50.73(a)(2)(vii)             |  |   |  |                                     |  |

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|--|--|--|--|--|--|--|--|--|--|--|--|
| <input type="checkbox"/> OTHER (Specify here, in abstract, or NRC 366A). |  |  |  |  |  |  |  |  |  |  |  |
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|   |  |  |  |  |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|--|--|--|
| 12. Licensee Contact for this LER                         |  |  |  |  |  |  |  |  |  |  |
| Licensee Contact<br>Zoe Cox, Regulatory Assurance Manager |  |  |  |  |  |  |  |  |  | Phone Number (Include area code)<br>(779) 231-6606 |

|   |        |           |              |                    |  |       |        |           |              |                    |  |
|---|--------|-----------|--------------|--------------------|--|-------|--------|-----------|--------------|--------------------|--|
| 13. Complete One Line for each Component Failure Described in this Report |        |           |              |                    |  |       |        |           |              |                    |  |
| Cause   | System | Component | Manufacturer | Reportable to IRIS |  | Cause | System | Component | Manufacturer | Reportable to IRIS |  |
|   |        |           |              |                    |  | N/A   | N/A    | N/A       | N/A          | N/A                |  |

|  |  |     |     |     |                              |  |  |       |     |      |
|--|--|-----|-----|-----|------------------------------|--|--|-------|-----|------|
| 14. Supplemental Report Expected       |  |     |     |     | 15. Expected Submission Date |  |  | Month | Day | Year |
| <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes (If yes, complete 15. Expected Submission Date) | N/A | N/A | N/A |                              |  |  |       |     |      |

|   |  |  |  |  |  |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|--|--|--|--|
| 16. Abstract (Limit to 1326 spaces, i.e., approximately 13 single-spaced typewritten lines) |  |  |  |  |  |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|--|--|--|--|

At 1440 CDT on July 7, 2024, the 0A and 0B trains of the Control Room Ventilation (VC) Temperature Control System were simultaneously inoperable resulting in a condition that could have prevented the fulfillment of a safety function and was reported as an eight-hour, non-emergency notification per 10 CFR 50.72(b)(3)(v)(D) under ENS 57211 to the NRC.

0B Control Room Ventilation (VC) Temperature Control system was restored to operable status at 1634 CDT on 7/7/2024.



## LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

(See NUREG-1022, R.3 for instruction and guidance for completing this form  
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|   |   |                                  |               |                            |                 |
|---|---|----------------------------------|---------------|----------------------------|-----------------|
| 1. FACILITY NAME<br><br>Byron Station, Unit 1 | <input checked="" type="checkbox"/> 050 | 2. DOCKET NUMBER<br><br>05000454 | 3. LER NUMBER |                            |                 |
|   | <input type="checkbox"/> 052            |                                  | YEAR<br>2024  | SEQUENTIAL NUMBER<br>- 001 | REV NO.<br>- 00 |

### NARRATIVE

#### A. Plant Operating Conditions Before the Event:

Event Date: July 7, 2024  
 Unit 1 – Mode 1 – Power Operations, Reactor Power 100 percent  
 Unit 2 – Mode 1 – Power Operations, Reactor Power 100 percent  
 Reactor Coolant System (RCS)[AB]: Normal Operating Temperature and Pressure

No structures, systems, or components were inoperable at the start of this event that contributed to the event.

#### B. Description of the Event:

At 1310 CDT on 7/7/24 the auxiliary building equipment operator (EO) noted the 0A Control Room Ventilation (VC) Temperature Control System chiller oil level had dropped from a previous rounds reading of 37 percent to 15 percent. The EO notified the main control room and the operations field supervisor was dispatched to review the condition. The shift manager notified maintenance to request support to add oil to the 0A VC chiller. At 1355 CDT, a briefing was held in the control room to perform the crosstie of the service building (VS) chilled water system to the 0A VC chilled water system per procedure BOP VC-20. At 1404 CDT, while the briefing was in progress, the auxiliary building EO notified the main control room that the oil level in the 0A VC chiller had further decreased to 0 percent in the sight glass, but that oil was still visible with foam present. Following the briefing, two equipment operators obtained keys to unlock the individual valves needed to perform the crosstie. At approximately 1435 CDT, the operations field supervisor notified the main control room that the oil level in the 0A VC chilled water system was no longer visible in the sight glass. At 1440 the 0A VC chiller was secured and declared inoperable by Operations and the equipment operators began to perform the procedure steps to establish the VC to VS chilled water crosstie. While attempting to crosstie 0A VC train to the service building (VS) chilled water system, the equipment operators incorrectly operated valves on the 0B VC chiller train. This caused the 0B VC chiller train to become inoperable. With both trains of control room chillers inoperable, Unit 1 and Unit 2 entered TS 3.7.11 Condition D. Operations personnel returned to the field at 16:34 CDT on 7/7/24 and restored the valve lineup for the 0B VC chiller returning the 0B VC chiller to operable and exiting Condition D of TS 3.7.11. This event was determined to be a loss of safety function for the control room chilled water system and an 8-hour ENS (57211) was made to the NRC per 10 CFR 50.72(b)(3)(v)(D) at 22:12 CDT on 7/7/24.

#### C. Causes of Event:

The root cause of this event was determined to be an inadequate brief performed by the Operations SRO with the Reactor Operator and Equipment Operators. During the brief, the SRO supervisor did not clearly establish that each operator understood their role in the crosstie activity or utilize station prints to clearly establish the intended plant manipulations. As a result, the equipment operators manipulated incorrect valves while establishing the crosstie which resulted in both trains of VC Temperature Control System being declared inoperable.

Contributing causes to the event were a lack of system knowledge and experience combined with less than adequate procedural guidance. The equipment operators performing the crosstie did not fully understand the flow path that needed to be established. Additionally, training provided in 2018 when the VS to VC crosstie



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|   |   | YEAR<br>2024                     | SEQUENTIAL NUMBER<br>001 | - | REV NO.<br>00 |

### NARRATIVE

modification was implemented, focused on technical specification changes and procedural guidance but did not demonstrate the flow paths between the two systems. Procedural guidance did not provide specific steps for each train or include detail regarding which train valves were associated with each VC train.

### D. Safety Consequences:

The temperature control system portion of the VC System (VC Temperature Control System) provides temperature control for the control room normally and following isolation of the control room. The VC Temperature Control System consists of the VC components (arranged in two independent and redundant trains) that provide cooling and heating of recirculated control room air.

This event had no safety consequences impacting plant or public safety. For approximately two hours on 7/7/24, the 0A and 0B Control Room Temperature (VC) Control System trains were inoperable requiring entry into TS 3.7.11, Control Room Ventilation (VC) Temperature Control System, Condition D. Temperatures in the main control room, during the approximately two hours both VC trains were inoperable, did not exceed the Tech Spec required limit of <= 80 degrees F and online risk remained green for both units throughout the event.

### E. Corrective Actions:

Upon discovery, the 0B Temperature Control System (VC) was returned to operable. Immediately following the event, the directly involved individuals were removed from watch-standing and remediated.

Corrective actions taken or planned to be taken include:

- Review and reinforcement of the requirements for conducting effective pre job briefs with each operating crew.
- Weekly communications performed by Station Leadership focusing on standards, human performance tool usage, and a review of learnings and examples from observations.
- Revising the applicable VS to VC crosstie procedures, to better human-engineer the procedure steps and add more detailed drawings.
- VS to VC crosstie training will be revised to include a review of the flow paths, heat up rates in the control room when cooling is not aligned, and the Technical Specification conditions for VC train inoperability.

### F. Previous Occurrences:

#### LER 454-2023-011-01

On March 18, 2023, at 14:40 CDT, the 0A Control Room Ventilation (VC) failed to actuate when performing the 1A Diesel Generator (DG) sequencer testing due to installed jumpers on OPR031J and OPR032J, Main Control Room Outside Air Intake A Monitors. Jumpers that were installed during the Bus 141 outage to defeat Main Control Room Radiation Monitor interlocks were not removed as expected at the conclusion of the bus outage. These jumpers prevented OPR031J and OPR032J, Main Control Room Outside Air Intake A Monitors from causing 0A Train VC actuations when required during 1A DG sequencer testing. OPR031J and OPR032J were declared inoperable. Once identified, the jumpers were removed from OPR031J and OPR032J and the monitors were restored to operable status.