



Timothy C. Peter
Site Vice President– JAF

JAFP-23-0031
June 13, 2023

United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555-0001

James A. FitzPatrick Nuclear Power Plant
Renewed Facility Operating License No. DPR-059
NRC Docket No. 50-333

Subject: LER: 2023-002, Reactor Protection System Electric Power Monitoring
System Trip Caused Primary Containment Isolation

Dear Sir or Madam:

This report is being submitted pursuant to 10 CFR 50.73(a)(2)(iv)(A).

There are no new regulatory commitments contained in this report.

Questions concerning this report may be addressed to Mr. Mark Hawes, Regulatory Assurance,
at (315) 349-6659.

Sincerely,

Timothy C. Peter
Site Vice President

TCP/MH

Enclosure: LER: 2023-002, Reactor Protection System Electric Power Monitoring
System Trip Caused Primary Containment Isolation

cc: USNRC, Region I Administrator
USNRC, Project Manager
USNRC, Resident Inspector
INPO Records Center (IRIS)

(03-14-2023)



LICENSEE EVENT REPORT (LER)

(See Page 3 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 Infocollections.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; email: oira_submission@omb.eop.gov. 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

James A. FitzPatrick Nuclear Power Plant

050
052

2. Docket Number

05000333

3. Page

1 OF 3

4. Title

Reactor Protection System Electric Power Monitoring System Trip Caused Primary Containment Isolation

Table with 8 columns: 5. Event Date, 6. LER Number, 7. Report Date, 8. Other Facilities Involved. Includes sub-headers for Month, Day, Year, Sequential Number, Revision No., Facility Name, and Docket Number.

9. Operating Mode

1

10. Power Level

100

11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: (Check all that apply)

Table with 6 columns for 10 CFR Part 20, 10 CFR Part 50, 10 CFR Part 21, 10 CFR Part 73, and other regulatory codes. Includes checkboxes for each code.

OTHER (Specify in Abstract below or in NRC Form 366A).

12. Licensee Contact for this LER

Licensee Contact

Mr. Mark Hawes, Regulatory Assurance

Telephone Number (Include Area Code)

315-349-6659

13. Complete One Line for each Component Failure Described in this Report

Table with 10 columns: Cause, System, Component, Manufacturer, Reportable to IRIS (twice).

14. Supplemental Report Expected

No
Yes (If yes, complete 15. Expected Submission date)

15. Expected Submission Date

Month: 08, Day: 14, Year: 2023

Abstract (Limit to 1560 spaces, i.e., approximately 15 single-spaced typewritten lines)

On April 14, 2023, at 05:11, James A. FitzPatrick Nuclear Power Plant (JAF) received annunciators and indication of a half-scam on the "B" side Reactor Protection System (RPS). The cause was determined to be an overvoltage condition that tripped the Electrical Protection Assembly (EPA) for the "B" RPS Motor Generator (MG) Set. The same condition occurred on May 26, 2023. These events caused invalid primary containment isolation signals in multiple systems, reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A). The investigation into the cause of the events is ongoing. A supplement to this report will be submitted when the cause is finalized.



**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 James A. FitzPatrick Nuclear Power Plant	<input checked="" type="checkbox"/> 050	2. DOCKET NUMBER 05000333	3. LER NUMBER		
	<input type="checkbox"/> 052		YEAR 2023	SEQUENTIAL NUMBER - 002	REV NO. - 00

NARRATIVE

Background

Reactor Protection System (RPS) [EIS: JE] Electric Power Monitoring System is provided to isolate the RPS bus from the motor generator (MG) set or an alternate power supply in the event of overvoltage, undervoltage, or underfrequency. This system protects the loads connected to the RPS bus against unacceptable voltage and frequency conditions and forms an important part of the primary success path of the essential safety circuits. Some of the essential equipment powered from the RPS buses includes the RPS logic, scram pilot valve solenoids, and various valve isolation logic.

RPS electric power monitoring assembly will detect any abnormal high or low voltage or low frequency condition in the outputs of the two MG sets or the alternate power supply and will de-energize its respective RPS bus, thereby causing all safety functions normally powered by this bus to de-energize. (Safety functions powered by the RPS buses deenergize to actuate.)

Two redundant Class IE circuit breakers are connected in series between each RPS bus and its MG set, and between each RPS bus and its alternate power supply. Each of these circuit breakers has an associated independent set of Class IE overvoltage, undervoltage, and under frequency sensing logic. Together, a circuit breaker and its sensing logic constitute an electric power monitoring assembly. If the output of the inservice MG set or alternate power supply exceeds predetermined limits of overvoltage, undervoltage, or underfrequency, a trip coil driven by this logic circuitry opens the circuit breaker, which removes the associated power supply from service.

Event Description

On April 14, 2023, at 05:11 when James A. FitzPatrick Nuclear Power Plant (JAF) at 100% power, received annunciators and indication of a half-scram on "B" side RPS. AOP-60, Loss of RPS Bus B Power, was entered and the cause was determined to be a trip of the "B" RPS MG set due to an overvoltage condition. The direct cause of the output breaker tripping was due to an Electric Power Monitoring System overvoltage trip on 71EPA-RPS1B1G, Electrical Protection Assembly (EPA).

On May 26, 2023, entry into AOP-60 caused by "B" side half scram. Also due to a trip of "B" RPS MG Set EPA caused by an overvoltage condition.

In both events, the condition was corrected when the RPS Bus was placed on the alternate power supply.

Both events resulted in invalid system actuations of "B" side half scram and Primary Containment Isolation System (PCIS) [JM] isolations. The following systems isolated as a result of the loss of "B" RPS bus: Reactor Water Cleanup [CE], Reactor Building ventilation [NG], "B" Containment Atmosphere Dilution [BB], Torus Vent and Purge, Drywell Equipment and Floor Drain Sumps [WK], "B" Drywell Containment Atmospheric Monitors [IP], Recirculation System Sample Line, and Main Steam Line Drains [SB]. "B" Standby Gas Treatment System [BH] started as designed. These system actuations were not initiated by signals in response to actual plant conditions or parameters satisfying the requirements for initiation of the system.

This event is reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A).



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	<input type="checkbox"/> 052		YEAR 2023	SEQUENTIAL NUMBER - 002	REV NO. - 00

Event Analysis

At the time of this report, the investigation into the cause of the event in April 14, 2023, and May 26, 2023 is ongoing. A supplement to this report will be submitted by August 14, 2023.

Similar Events

- ENS 42967, Half Scram Signal Due to Equipment Failure, event dated September 8, 2006 (CR-JAF-2006-03286)
- ENS 43332, Primary Containment Isolation Due to Loss of RPS Power Supply, event dated April 12, 2007 (CR-JAF-2007-01422)
- ENS 51480, Invalid Primary Containment Isolation Signal, event dated August 23, 2015 (CR-JAF-2015-03758)

Corrective Actions

Completed Actions

RPS Bus was placed on the alternate power supply after each event.

Safety Significance

There were no actual nuclear consequences. RPS Electric Power Monitoring System responded as designed to an overvoltage condition to protect the electrical power systems. Then system actuations responded to the loss of power condition as expected without any issue. There was no loss of any safety functions during this event.

References

- Issue Report - IR 04670001, AOP-60 entry due to B side half scram, dated April 14, 2023
- Issue Report - IR 04680732, Entry into AOP-60, dated May 26, 2023