

JAFP-20-0042  
June 9, 2020

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: 2020-003, High Pressure Coolant Injection Inoperable due to Oil Leak

Dear Sir or Madam:

This report is being submitted pursuant to 50.73(a)(2)(v)(D).

There are no new regulatory commitments contained in this report.

Questions concerning this report may be addressed to Mr. Richard Sullivan, Regulatory Assurance Manager, at (315) 349-6562.

Sincerely,



Patrick D. Navin  
Site Vice President

PDN/RS/hm

Enclosure: LER: 2020-003, High Pressure Coolant Injection Inoperable due to Oil Leak

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



# **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 Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to [Infocollections.Resource@nrc.gov](mailto:Infocollections.Resource@nrc.gov), and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

**1. Facility Name**

James A. FitzPatrick Nuclear Power Plant

**2. Docket Number**

05000333

**3. Page**

1 OF 3

**4. Title**

High Pressure Coolant Injection Inoperable due to Oil Leak

**5. Event Date**

Month	Day	Year
04	10	2020

**6. LER Number**

Year	Sequential Number	Rev No.
2020	003	00

**7. Report Date**

Month	Day	Year
06	09	2020

**8. Other Facilities Involved**

Facility Name	Docket Number
N/A	N/A

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

1

<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)

**10. Power Level**

<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
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<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.77(a)(1)
<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 73.77(a)(2)(i)
<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(ii)
	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> OTHER	Specify in Abstract below or in NRC Form 366A

**12. Licensee Contact for this LER****Licensee Contact**

Mr. Richard Sullivan, Regulatory Assurance Manager

**Telephone Number (Include Area Code)**

315-349-6562

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

Cause	System	Component	Manufacturer	Reportable to ICES	Cause	System	Component	Manufacturer	Reportable to ICES
B	SJ	PCV	R290	Y					

**14. Supplemental Report Expected**
☐ Yes (If yes, complete 15. Expected Submission date) ☒ No
**15. Expected Submission Date**

Month	Day	Year

**Abstract** (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On April 10, 2020 at 0300, an oil leak from 23PCV-12, HPCI Trip System Pressure Control Valve (PCV) resulted in the system being declared inoperable. This condition is being reported as a condition that could have prevented the fulfillment of the safety function of a system needed to mitigate the consequences of an accident per 10CFR50.73(a)(2)(v)(D).

Corrective action to replace valve 23PCV-12 was completed and system was restored to service at time 2015 on April 10, 2020.

**LICENSEE EVENT REPORT (LER)  
CONTINUATION SHEET**

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1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
James A. FitzPatrick Nuclear Power Plant	05000 – 333	2020	– 003	– 00

**NARRATIVE****Background**

The High Pressure Coolant Injection (HPCI) System [EIS Identifier: BJ] is part of the Emergency Core Cooling System (ECCS); HPCI provides and maintains an adequate coolant inventory inside the Reactor Pressure Vessel [RPV] to prevent damage to the reactor core under postulated accident scenarios. The system is comprised of various components which include a turbine, pumps, valves, piping, and instrumentation. The HPCI System may be initiated by automatic or manual means.

The HPCI turbine oil system provides for lubrication and cooling of the equipment bearings and other accessories. The oil system also provides control and hydraulic oil to the turbine governor system. Loss of oil pressure to the turbine governor system will cause the steam supply stop valve and turbine control valve to go shut, securing steam to the turbine. The HPCI oil system is not normally pressurized, the system is only pressurized during operational checks of the system and during actual system operation.

**Event Description**

While conducting a HPCI monthly operability test (ST-4B), a control oil leak was observed from 23PCV-12. The oil leak is only visible when the oil system is pressurized. Initial leakage rate was estimated at approximately 0.1 gallons per minute, which would still allow HPCI system to meet mission time. To confirm leak location and validate leak rate, the auxiliary oil pump was restarted. With system oil pressure reestablished, the leak rate was determined to have degraded such that the capability of the HPCI system to meet mission time would be challenged.

**Event Analysis**

Level in the HPCI Oil Tank provides net positive suction head (NPSH) to the suctions of the oil pumps for the duration of HPCI mission time. Loss of NPSH to the suction of HPCI Main Lube Oil Pump (23P-1MO) and the HPCI Turbine Aux. Lube Oil Pump (23P-150) will result in a loss of oil pressure to the system bearings and system control valves. Oil pressure is required for operation of the HPCI Turbine Steam Supply Stop Valve (23HOV-1) and HPCI Turbine Control Valve (23HOV-2). Loss of bearing cooling and oil pressure for the stop and control valves would have limited HPCI operation.

The elevated leak rate would challenge the capability of the HPCI system in meeting mission time.

**Cause**

The cause was determined to be a tear in the 23PCV-12 control valve diaphragm, allowing a loss of control oil from the system.

**Similar Events**

Previous LER: None identified.

**FAILED COMPONENT IDENTIFICATION:**

Manufacturer:	Robertshaw
Manufacturer Model Number:	VC-210
NPRDS Manufacturer Code:	R290
NPRDS Component Code:	PCV
FitzPatrick Component ID:	23PCV-12

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**Completed Corrective Actions**

Valve 23PCV-12 was replaced. Additional corrective actions are documented in the Corrective Action Program.

**Safety Significance**

**Nuclear Safety** - The failure of the HPCI turbine over-speed reset control valve diaphragm would result in a loss of HPCI turbine lubricating oil and control oil during HPIC oil system operation. Depending on the amount of oil lost and system demands, the leakage may have prevented the HPCI from meeting system specified mission time.

**Industrial safety** – No actual or potential industrial safety consequences resulted from this event.

**Radiological safety** – No actual radiological impact is associated with this event.

**References**

- Issue Report – IR 04334315, HPCI Oil Leak, dated April 10, 2020
- ENS 54657, issued 4/10/2020