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Brian R. Sullivan
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JAFP-16-0002
February 4, 2016

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

Subject: LER: 2015-006-01, Transitory Secondary Containment Differential
Pressure Excursions

James A. FitzPatrick Nuclear Power Plant
Docket No. 50-333
License No. DPR-59

Dear Sir or Madam:

This report is submitted in accordance with 10 CFR 50.73(a)(2)(v)(C).

There are no commitments contained in this report.

Questions concerning this report may be addressed to Mr. Chris M. Adner, Regulatory Assurance Manager, at (315) 349-6766.

Sincerely,

A handwritten signature in black ink, appearing to read "BRS", written over a horizontal line.

Brian R. Sullivan
Site Vice President

BRS/CMA/ds

Enclosure(s): JAF LER: 2015-006-01, Transitory Secondary Containment Differential Pressure Excursions

cc: USNRC, Region 1
USNRC, Project Directorate
USNRC, Resident Inspector

(02-2014)



LICENSEE EVENT REPORT (LER)

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, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.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

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4. TITLE

Transitory Secondary Containment Differential Pressure Excursions

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
09	22	2015	2015	006	01	2	4	2016	N/A	N/A
									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)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
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)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<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)(C)	<input type="checkbox"/> OTHER
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT Mr. Chris M. Adner, Regulatory Assurance Manager	TELEPHONE NUMBER (Include Area Code) 315-349-6766
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13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
	NG	N/A	N/A	N					

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 September 22, 2015 at 17:03, with James A. FitzPatrick Nuclear Power Plant operating at 100 percent power, the Emergency and Plant Information Computer (EPIC) indicated a spike in Secondary Containment (SC) differential pressure (d/P) during performance of a surveillance test associated with automatic isolation of SC and initiation of the Standby Gas Treatment System. Per the plant data systems SC d/P exceeded the Technical Specification (TS) allowed value, and then immediately trended negative following auto-start of one of the trains of Standby Gas Treatment.

The time period that SC d/P was greater than the TS allowed value is reportable pursuant to 10 CFR 50.72(b)(3)(v)(C) and 10 CFR 50.73(a)(2)(v)(C), as an event or condition that could have prevented fulfillment of a safety function. SC was operable following reestablishment of greater than or equal to 0.25 inches of water vacuum, and remains operable.

SC d/P excursions during transition from normal to isolation mode of the Reactor Building Ventilation (RBV) System are an expected condition, and attributable to the design of the non-safety related RBV System. The cause of the SC d/P exceeding the TS allowed value has been determined not to be associated with a component failure or equipment malfunction. Similar reportable events were identified during preparation of this report. A comprehensive listing of these occurrences is included in the report.



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

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James A. FitzPatrick Nuclear Power Plant	05000333	YEAR	SEQUENTIAL NUMBER	REV NO.	2 of 5
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NARRATIVE

Background

The Secondary Containment (SC) [EIS identifier: NG] boundary surrounds the primary containment and refueling equipment. The boundary forms a control volume to contain, dilute, and hold up fission products. The SC consists of four systems which include the Reactor Building, the Reactor Building Isolation and Control System, the Standby Gas Treatment (SBGT) System [BH], and the Main Stack. Secondary Containment is designed to provide containment for postulated design basis accident scenarios: loss-of-coolant accident and refueling (fuel handling) accident. Since pressure may increase in Secondary Containment relative to the environmental pressure, support systems are required to maintain a differential pressure vacuum such that external atmosphere would leak into containment rather than fission products leak out.

The systems which maintain a differential pressure vacuum inside Secondary Containment include the normal Reactor Building Ventilation and Cooling (RBV) System [VA] (during normal plant operations) and the safety-related Standby Gas Treatment System for post-accident conditions.

Technical Specification (TS) Surveillance Requirement (SR) 3.6.4.1.1 requires the SC differential pressure to be maintained more negative than 0.25 inches of water vacuum relative to the atmosphere. Failure to meet this SR, except for momentary transients due to gusty wind conditions (TS Bases 3.6.4.1.1), results in the Secondary Containment Limiting Condition for Operation (LCO) not being met, and requires the Secondary Containment to be declared Inoperable.

Event Description

On September 22, 2015 at 17:03, with James A. FitzPatrick Nuclear Power Plant operating at 100 percent power, the Emergency and Plant Information Computer (EPIC) EPIC A-3348 indicated a spike in SC differential pressure during performance of a surveillance test associated with automatic isolation of SC and initiation of the SBGT.

An operator was subsequently dispatched to the ventilation control panel. In general, the control room indications (i.e. the ventilation control panel) are used for operability determinations. They verified that Secondary Containment differential pressure was more negative than the Technical Specification allowed value; therefore, the SC was determined to remain Operable.

On September 29, 2015, as part of the investigation into RB differential pressure response during the process of isolating the reactor building, Operations determined that EPIC does correspond with plant status.

An NRC notification was made via ENS 51512 on 11/3/2015. This Licensee Event Report (LER) is being submitted per 10 CFR 50.73(a)(2)(v)(C) as an event or condition that could have prevented the fulfillment of a safety function to control the release of radioactive material. The failure to immediately report the condition was entered into the JAF Corrective Action Program.



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Event Analysis

Cause

The Secondary Containment differential pressure has a tendency to move towards a slight positive, when the RBV is switched from normal to an isolation mode. This is also observed from the readings obtained in the control room for the SC pressure during the transition phase. The cause of the increase in d/P is the difference in closure time for the supply and exhaust isolation valves. The supply and exhaust isolation valves are designed to close within 15 and 5 seconds respectively. After the exhaust valves are closed (within the first 5 seconds), the operating supply fans keep bringing outside air in for the remaining 10 seconds of the supply valves closure, causing SC d/P to rise.

The condition of an increase in SC d/P during transition between normal and isolation modes of the RBV System is an expected response, and attributable to the design of the non-safety related RBV System. The cause of this condition is not associated with any component failure or malfunction.

Similar Events

Internal Events

The JAF Plant Data System (PDS) was utilized to review the Secondary Containment differential pressure response over the previous three years during surveillance testing resulting in isolation of the Secondary Containment and automatic initiation of the SGBT System (i.e. ST-34A and ST-34B). The review identified twelve (12) instances where the transition between normal and isolation mode of the RBV System resulted in a d/P that was less negative than the TS requirement. The results are shown in Table 1.

The JAF Paperless Condition Reporting System was reviewed to confirm that the Secondary Containment differential pressure responses depicted in Table 1 were not associated with any failure or component malfunction. The transitory spikes are an expected condition, and were not previously documented in the JAF Corrective Action Program.

Table 1 – Differential Pressure Response

Date	Surveillance Test	Peak (in. wg)	Duration (sec)
3/29/2013	ST-34B	-0.01	25
3/29/2013	ST-34B	+0.38	45
4/1/2013	ST-34B	-0.03	20
6/27/2013	ST-34A	+0.14	25
6/27/2013	ST-34A	-0.13	10
10/30/2014	ST-34B	+0.04	23
10/30/2014	ST-34B	-0.13	10
10/30/2014	ST-34B	-0.08	15
10/30/2014	ST-34B	-0.03	15
10/30/2014	ST-34B	-0.18	5
10/30/2014	ST-34B	-0.20	5
9/22/2015	ST-34A	+0.04	25



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External events:

Susquehanna Steam Electric Station; Unit 1: LER 2015-005, Loss of Secondary Containment Differential Pressure During Ventilation Damper Testing.

Columbia Generating Station; LER 2013-007-01, Secondary Containment Pressure Exceeded During Severe Weather Conditions.

Fermi Nuclear Generating Station; Unit 2: LER 2015-001-01, Secondary Containment Declared Inoperable After Loss of Reactor Building Ventilation from Freeze Protection Actuation.

Corrective Actions

Completed Actions

- Discuss the guidance in NUREG-1022 Revision 3 with applicable Operations and Regulatory Assurance personnel.

Safety Consequence and Implications

There were no actual consequences caused by these events. SC provides a control volume to contain fission products that leak from primary containment, or are released directly to the secondary containment as a result of a Loss of Coolant Accident (LOCA) or Refueling Accident (RA).

The difference in closing time between the inlet and exhaust valves of the reactor building during transition from normal to isolate mode represents a potential exfiltration pathway for released activity. This potential exfiltration pathway has been conservatively quantified, and is included in the JAF design basis accident analyses. Dose consequence results remain well below the 10 CFR 100 and 10 CFR 50.67 guidelines for all postulated accident conditions.

The Design Basis (DB) LOCA event results in a rapid primary containment pressure increase and reactor water level decrease. Drywell High Pressure or Low Reactor Water Level signals directly isolate the RBV, and start SBGT. Fuel damage caused by a DB LOCA is not expected until a rise in fuel cladding temperature after coolant is lost. The SC differential pressure was positive for a maximum of approximately 45 seconds during the RBV isolations reported in this LER. Therefore, it would have occurred early in the DB LOCA event. RBV isolation and initiation of SBGT would have been completed prior to fuel failure and release of radiological materials.

The DB RA event results in a release of radioactive material by a dropped fuel assembly during refuel operations. Radiation detectors would detect the release and initiate SC isolation. The pressure changes reported in this LER could have caused some exfiltration before the isolation was complete; however, the amount of exfiltration, consequentially the offsite and control room doses, would remain below regulatory limits as analyzed.



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References

- Condition Report: CR-JAF-2015-04198, September 22, 2015, Transitory Secondary Containment Differential Pressure Excursion
- Condition Report: CR-JAF-2015-04893, Failure to Immediately Report the Condition Documented in CR-JAF-2015-04198
- Technical Specifications
- TSTF-551, Revision 1, "Address Transient Secondary Containment Conditions"
- Nuclear Safety Evaluation: JAF-SE-96-071, Revision 2