



Entergy Nuclear Operations, Inc.  
Pilgrim Nuclear Power Station  
600 Rocky Hill Road  
Plymouth, MA 02360

August 7, 2017

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

SUBJECT: Licensee Event Report 2017-010-00, Air Accumulation Creates Small Void in  
Core Spray Discharge Piping

Pilgrim Nuclear Power Station  
Docket No. 50-293  
Renewed License No. DPR-35

LETTER NUMBER: 2.17.054

Dear Sir or Madam:

The enclosed Licensee Event Report 2017-010-00, Air Accumulation Creates Small Void in Core Spray Discharge Piping, is submitted in accordance with Title 10 Code of Federal Regulations 50.73.

If you have any questions or require additional information, please contact me at (508) 830-8323.

There are no regulatory commitments contained in this letter.

Sincerely,

A handwritten signature in black ink, appearing to read "Everett P. Perkins, Jr." with a stylized flourish at the end.

Everett P. Perkins, Jr.  
Manager, Regulatory Assurance

EPP/sc

Attachment: Licensee Event Report 2017-010-00, Air Accumulation Creates Small Void in  
Core Spray Discharge Piping (3 Pages)

JEZZ  
NRR

cc: Mr. Daniel H. Dorman  
Regional Administrator, Region I  
U.S. Nuclear Regulatory Commission  
2100 Renaissance Blvd., Suite 100  
King of Prussia, PA 19406-2713

Mr. John Lamb, Senior Project Manager  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Mail Stop O-8C2A  
Washington, DC 20555

USNRC Senior Resident Inspector  
Pilgrim Nuclear Power Station

**Attachment**

Letter Number 2.17.054

Licensee Event Report 2017-010-00

Air Accumulation Creates Small Void in Core Spray Discharge Piping

(3 Pages)



**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 Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by 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.

<b>1. FACILITY NAME</b> Pilgrim Nuclear Power Station	<b>2. DOCKET NUMBER</b> 05000-293	<b>3. PAGE</b> 1 OF 3
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**4. TITLE** Air Accumulation Creates Small Void in Core Spray Discharge Piping

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
06	07	2017	2017	- 010	00	08	03	2017	N/A	N/A
									FACILITY NAME	DOCKET NUMBER
									N/A	N/A

<b>9. OPERATING MODE</b>  N	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §:</b> (Check all that apply)			
	<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)
<b>10. POWER LEVEL</b>  100	<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)
	<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 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 checked="" 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. Everett P. Perkins, Jr. - Regulatory Assurance Manager	TELEPHONE NUMBER (Include Area Code) 508-830-8323
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**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
D	BM	N/A	N/A	Y					

<b>14. SUPPLEMENTAL REPORT EXPECTED</b> <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	<b>15. EXPECTED SUBMISSION DATE</b>	MONTH	DAY	YEAR

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

On June 6, 2017, at 1357 [EDT] with the reactor at 100% core thermal power and steady state conditions, plant personnel were performing Ultrasonic testing (UT) examination on Core Spray A high point piping in the A Residual Heat Removal Quad to ensure this piping was water solid, when they identified that the top of this horizontal pipe had an air void internally. A high point vent line with valves is located in the area of the UT exam. It was found that the top 2 inches of the 10 inch core spray pump discharge line had accumulated an air void within the known inverted loop in Core Spray Loop-A discharge line. The system had been drained for maintenance during the Refueling Outage.

Pilgrim Nuclear Power Station is reporting this event pursuant to 10 CFR 50.73(a)(2)(i)(B), as a condition prohibited by Technical Specifications. Although upon discovery the proper Limiting Condition for Operation Action Statement was entered and the void was filled immediately to correct the issue, it is believed that this condition existed before the time of discovery for a period of time longer than that allowed by Technical Specifications.

This event posed no threat to public health and safety.



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

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 Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to [Infocollects.Resource@nrc.gov](mailto:Infocollects.Resource@nrc.gov), and to the Desk Officer, Office of Information and Regulatory Affairs, NEOF-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.

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1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
Pilgrim Nuclear Power Station	05000-293	YEAR	SEQUENTIAL NUMBER	REV NO.
		2017	- 010	- 00

**BACKGROUND**

Air/gas in discharge piping can be an indicator of potential back-leakage from high-pressure sources such as accumulators or the Reactor Coolant System, and the gas may have moved into the pumps and the pump suction piping. Such gas may have flowed through multiple closed in-series valves. For this reason, it is important to reassess air/gas accumulation conditions following system operations and valve manipulations. (Reference NRC Generic Letter 2008-01).

**EVENT DESCRIPTION**

While performing Ultrasonic testing (UT) examination on Core Spray A high point piping in the A Residual Heat Removal Quad to ensure this piping was water solid, it was identified that the horizontal pipe had an air void internally. This piping goes through the concrete wall at this location and into the Torus room. A high point vent line with valves is located in the area of the UT exam. It was found that the top 2 inches of the 10 inch core spray pump discharge line had accumulated an air void within the known inverted loop in Core Spray Loop-A discharge line.

**CAUSE OF THE EVENT**

The air volume was likely introduced into the system as a consequence of inadequate guidance in procedure 2.2.20, Core Spray, which does not provide task specific directions for fill and vent of the Core Spray system to restore from a draindown.

The information for filling and venting the system was contained in one Section of the procedure and in two Attachments, but it was not compiled in one place that was readily accessible to the Operator performing the procedure. The lack of guidance provided an error trap when system restoration was being performed.

**CORRECTIVE ACTIONS**

The immediate corrective action was to vent the air from the 10 inch Core Spray Pump discharge line that had accumulated an air void within the known inverted loop in Core Spray Loop-A Discharge Line.

The follow-up UT exam was performed and determined that the Core Spray Loop-A discharge piping was water solid with no evidence of air present. Core Spray Loop-A is OPERABLE.

Procedure 2.2.20, Core Spray, will be revised to provide specific guidance to fill and vent the Core Spray system following maintenance requiring a system draindown, or any activity requiring a system breach.



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

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		2017	- 010	- 00

**SAFETY CONSEQUENCES**

There were no consequences to the safety of the general public; nuclear safety, industrial safety, or radiological safety due to this event. For the purpose of evaluating the potential consequences of the as-found void volume, the measured void volume was compared to the Maximum Allowable Void Criteria that was established for this purpose. These criteria are used only for functionality determinations if voids are detected. The void volume did not exceed the maximum allowable void criteria. Therefore, the Core Spray system would have been capable of performing all of its specified safety functions.

No actions to reduce the frequency or consequence are necessary.

**REPORTABILITY**

Pilgrim Nuclear Power Station (PNPS) is reporting this event pursuant to 10 CFR 50.73(a)(2)(i)(B), as a condition prohibited by Technical Specifications (TS). Although upon discovery the proper Limiting Condition for Operation Action Statement was entered and the void was filled immediately to correct the issue, it is believed that this condition existed before the time of discovery for a period of time longer than that allowed by TS.

**PREVIOUS EVENTS**

A review of PNPS LERs since NRC Generic Letter 2008-01 was issued did not identify any other LERs that have been written regarding line voids of air or gas accumulation in discharge piping.

**REFERENCES**

CR- PNP-2017-06029