



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

June 13, 2017

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

SUBJECT: Licensee Event Report 2017-006-00, Source Range Monitor Inoperable During Fuel Movement

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

LETTER NUMBER: 2.17.044

Dear Sir or Madam:

The enclosed Licensee Event Report 2017-006-00, Source Range Monitor Inoperable During Fuel Movement, 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 2017-006-00, Source Range Monitor Inoperable During Fuel Movement (3 pages)

IE22
NRK

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

NRC Senior Resident Inspector
Pilgrim Nuclear Power Station

Attachment

Letter Number 2.17.044

Licensee Event Report 2017-006-00

Source Range Monitor Inoperable During Fuel Movement

(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.

1. FACILITY NAME Pilgrim Nuclear Power Station	2. DOCKET NUMBER 05000293	3. PAGE 1 OF 3
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4. TITLE Source Range Monitor Inoperable During Fuel Movement

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
04	14	2017	2017	- 006	- 00	06	13	2017	N/A	05000 N/A
									FACILITY NAME	DOCKET NUMBER
									N/A	05000 N/A

9. OPERATING MODE N	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (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)
10. POWER LEVEL 0	<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)
	<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 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	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
X	IG	DET	R220	Y					

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

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

On April 15, 2017, with the reactor at 0 percent core thermal power in a refueling outage, Pilgrim Nuclear Power Station discovered that during fuel movements (core alterations) conducted on April 14th and April 15th in reactor quadrant 'B', source range monitor channel B (SRM B) was inoperable due to not meeting the signal to noise ratio of no less than 2 to 1 required by FSAR section 7.5.4.1.

This event is reportable under 10 CFR 50.73(a)(2)(i)(B), any operation or condition which was prohibited by the plant's Technical Specifications.

There was no impact to public health and safety from this condition.



**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, 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.

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1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Pilgrim Nuclear Power Station	05000-293	2017	- 006	- 00

NARRATIVE

BACKGROUND:

The Source Range Monitors (SRMSs) provide neutron flux information during reactor startup and low flux level operations. There are four SRM channels, each of which includes one detector that can be remotely positioned in the core from the control room. The detectors are inserted into the core for a reactor startup and may be withdrawn if the indicated count rate is above preset limits or if the Intermediate Range Monitors (IRMs) are on the third range or above.

EVENT DESCRIPTION:

During fuel movements (core alterations) conducted on April 14th and April 15th in reactor quadrant B, SRM channel B was inoperable due to not meeting the signal to noise ratio of no less than 2 to 1 required by FSAR section 7.5.4.1. This was a condition prohibited by Technical Specification 3.10.B.

CAUSE OF THE EVENT:

The cause of the event was that SRM B had faulty or dirty pre amp connectors which led to the signal to noise ratio margin degrading to less than the minimum required 2 to 1 ratio. This condition was not recognized as being required or validated by the stations procedures.

CORRECTIVE ACTIONS:

The following corrective actions to reduce the probability of similar events occurring in the future were performed:

- The SRM B detector was replaced.
- The SRM cables and connectors were cleaned.
- A ground path between the preamplifier and the cabinet frame was cleared.
(After the ground path was cleared, the noise was significantly reduced.)
- SRM calibration test procedure was revised to include determinations of signal to noise ratio.
- SRM discriminator setting procedure was revised to include determinations of signal to noise ratio.

SAFETY CONSEQUENCES:

There are no consequences to the general safety of the public, nuclear safety, industrial safety and radiological safety from this event. The inoperability of SRM B had no significant impact on the public other than not being able to monitor an inadvertent criticality at a very low level in one quadrant of the core.

No actions to reduce the frequency or consequence are necessary.



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CONTINUATION SHEET**

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REPORTABILITY:

On April 15, 2017, after moving fuel during the current Refueling Outage, it was discovered that Source Range Monitor (SRM) B was inoperable. The SRM B was located in a core quadrant in which fuel was moved. This situation created an event that is reportable under 10 CFR 50.73(a)(2)(i)(B), a condition prohibited by the plant's Technical Specifications.

PREVIOUS EVENTS:

A review of PNPS LERs for the last ten years did not find a similar event as described in this LER.

REFERENCES:

- CR-PNP-2017-3541
- CR-PNP-2017-3659
- CR-PNP-2017-3660
- CR-PNP-2017-3773
- CR-PNP-2017-3952
- CR-PNP-2017-5294