



Exelon Generation®

Oyster Creek  
Route 9 South  
P.O. Box 388  
Forked River, NJ 08731

10 CFR 73.71

RA-17-029

May 3, 2017

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk or O-8B1  
One White Flint North  
11555 Rockville Pike  
Rockville, MD 20852

Oyster Creek Nuclear Generating Station  
Renewed Facility Operating License No. DPR-16  
NRC Docket No. 50-219

Subject: Special Report 2016-S01-01, "Special Nuclear Material Discovered Outside of Material Access Area"

Enclosed is Special Report 2016-S01-01 reporting the discovery of Special Nuclear Material outside of the Material Access Area, which occurred on October 6, 2016.

This event did not affect the health and safety of the public or plant personnel. There are no regulatory commitments made in this submittal.

Should you have any questions concerning this report, please contact Mike McKenna, Regulatory Assurance Manager, at (609) 971-4389.

Respectfully,

Michael Gillin  
Plant Manager  
Oyster Creek Nuclear Generating Station

Enclosure: NRC Form 366, Special Report 2016-S01-01

cc: Administrator, NRC Region I  
NRC Senior Resident Inspector - Oyster Creek Nuclear Generating Station  
NRC Project Manager - Oyster Creek Nuclear Generating Station

IEZZ  
NRR



**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](mailto: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> Oyster Creek, Unit 1	<b>2. DOCKET NUMBER</b> 05000219	<b>3. PAGE</b> 1 OF 3
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**4. TITLE**  
Special Nuclear Material Discovered Outside of Material Access Area

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
10	06	16	2016	S01	01	05	03	17	N/A	N/A

**9. OPERATING MODE**      **11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)**

N	<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)
000	<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 checked="" 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 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 checked="" type="checkbox"/> OTHER	Specify in Abstract below or in NRC Form 366A	

**12. LICENSEE CONTACT FOR THIS LER**

LICENSEE CONTACT Michael McKenna, Regulatory Assurance Manager	TELEPHONE NUMBER (Include Area Code) 609-917-4389
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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
X	IG	DET	G080	N					

<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 October 6, 2016, a box of in-core power monitoring detectors (i.e., local power range monitors) was found in the Oyster Creek Generating Nuclear Station (OCNGS) Warehouse Annex located in the Owner Control Area (OCA). The box was identified during storeroom movement of equipment to find other stock items. It was determined that the regenerative detectors had not being properly stored pursuant to applicable 10 CFR 73 physical security requirements from the time of discovery back to 1987. Upon discovery the detectors were immediately guarded by Station Security Personnel and actions were performed to transfer the detectors to a Material Access Area.

The event posed no threat to the public health and safety as the detectors were not irradiated (never placed in the reactor core).

This Special Report is being submitted in accordance with the requirements of 10 CFR 73.71(a)(4) and 10 CFR 73 Appendix G, Section 1.



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

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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, 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	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Oyster Creek, Unit 1	05000219	2016	- S01	- 01

**NARRATIVE**

**Plant Conditions Prior To Event**

Event Date: October 6, 2016      Event Time: 1548 EDT  
Unit 1 Mode: Cold Shutdown      Power Level: 0%

**Description of Event**

On October 6, 2016, a box of in-core power monitoring detectors (i.e., local power range monitors) was found in the OCNGS Warehouse Annex located in the Owner Control Area (OCA). The box was identified during storeroom movement of equipment to find other stock items. The box was located under a pallet with other material stacked on top. One side of the box had hand written markings stating that the box contained eight (8) regenerative neutron detectors and a box of tubing. There were no special markings or information contained inside the box indicating that the box contained Radioactive Material.

Upon discovery the stockkeeper in the warehouse immediately identified the box as possible Special Nuclear Material (SNM) and contacted the Reactor Engineering Department. The Reactor Engineering Manager with support from General Electric (GE) and other Exelon sites identified these detectors as BWR-6 in-core type detectors, not previously utilized at OCNGS. The SNM was immediately guarded by Security and a 1-hour notification in accordance with 10 CFR 73.71(a) and 10 CFR 73, Appendix G, Section 1 was completed to the Nuclear Regulatory Commission (NRC).

The detectors were transferred to the Protected Area Warehouse, where the OCNGS Material Access Area is located. The detectors were guarded by Security through the transfer process at all times. Additionally, a Radiation Protection survey of the box and detectors was completed and no dose rate was reported on the material discovered.

**Analysis of Event**

The box of in-core power monitoring detectors was found outside of a Material Access Area. This box contained one single-packaged coil in the box. The packaging was confirmed intact and was heat sealed shut. It was apparent that no disruption of the contents of the box had occurred and that the box had not been opened recently. Inside the packaging, there were multiple tubing coils with one end containing an approximate 1/8 inch diameter by 4-inch long stainless tube with no markings on the tube. The other end of the coil contained a detector union with a visible center pin connection. A total of eight (8) coils with detectors were identified inside the sealed package. The contents of the box were examined in more detail. The serial numbers and pictures of the detectors were sent to GE, which validated that the detectors were in-core local power range monitors typical of a BWR-6 unit and not a type of detector currently utilized at OCNGS.

The markings on the box indicate the detectors originated from GE's San Jose, California facility, which has since been closed. Packing material and desiccant packs found inside the shipping container indicate the detectors were packaged after 1977. The box also contains hand written markings with numbering indicating that the package might have been shipped in 1984. The box of in-core power monitoring detectors, although not confirmed, most likely was part of a test program that took place at OCNGS between the years of 1975 to 1990. This program was discontinued in a 1990 outage at OCNGS when



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**NARRATIVE**

the dry tubes were removed and replaced with standard local power range monitor tubes used in remainder of the core.

Neither GE nor Reuter Stokes has been able to provide records from the 1980s to help identify these detectors. A record search was performed at OCGNS. Neither the serial number on the box, nor the codes found on the detectors were included in annual records indicating that the detectors most likely were never entered. In addition, a search of Radioactive Material Shipments records dating back to 1982 was performed and did not identify a receipt survey for this box.

**Immediate Actions Completed**

- Transferred the box of in-core power monitoring detectors to a Material Access Area.
- Completed Extent of Condition Inspections in all material storage facilities at OCGNS.

**Cause of the Event**

The original failure to control the SNM occurred in the 1977 to 1989 time frame.

The cause of this event was determined to be a failure to enter these detectors into the SNM tracking program.

Contributing to this event, implementation of the Low Enriched Uranium requirement of 10CFR73 in 1988 did not identify and move these detectors using the appropriate control and security protocols. This resulted in loss of accountability for these detectors until found on October 6, 2016.

The site failed to perform an adequate extent of condition search in 2007 when an IRM (Intermediate Range Monitor) detector was found in the training facility, which could have identified these detectors at an earlier time.

**Previous Event**

A nuclear instrumentation detector was discovered in a training class outside of the site protected area boundary. Investigation into the history for the detector found that its serial number matched an intermediate range monitor detector that was previously included in the site SNM inventory from 1989. This issue was evaluated by the NRC as documented in a 2007 Material Control and Accountability Inspection Report (2007-403) for OCGNS, in which a Green Non-cited Violation was issued for the incident.