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10 CFR 50.73

RA-16-064

June 29, 2016

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

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

Subject: Licensee Event Report (LER) 2016-003-00, "Manual SCRAM Inserted due to Leakage from the 'D' Reactor Recirculation Pump Seal"

Enclosed is LER 2016-003-00 reporting the event or condition that resulted in a manual actuation of Reactor Protection System on April 30, 2016 due to leakage from the 'D' Recirculation Pump Seal.

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

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

Respectfully,

FOR M. Gillin

Michael Gillin
Plant Manager
Oyster Creek Nuclear Generating Station

w/Enclosure

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

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NRC FORM 366 (11-2015) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2018

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.

LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Oyster Creek, Unit 1	05000219	1 OF 3

4. TITLE

Manual SCRAM Inserted due to Leakage from the 'D' Reactor Recirculation Pump Seal

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	30	2016	2016	- 003	- 00	06	29	2016	N/A	N/A
									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)*			
N	☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
	☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
	☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
	☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☒ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
10. POWER LEVEL	☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
	☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
	☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(C)	☐ 73.77(a)(1)
1%	☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(D)	☐ 73.77(a)(2)(i)
	☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(ii)
		☐ 50.73(a)(2)(i)(C)	☐ OTHER Specify in Abstract below or in NRC Form 366A	

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT	TELEPHONE NUMBER *(Include Area Code)*
Michael McKenna, Regulatory Assurance Manager	(609)971-4389

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
B	AD	SEAL	824A	Y	N/A	N/A	N/A	N/A	N/A

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO		06	24	2016

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

On April 30, 2016, at 1804 hours, during the plant startup following the 1M38 maintenance outage, a reactor SCRAM was manually inserted by the Control Room Operators during post maintenance testing following work on the 'D' Reactor Recirculation Pump (RRP) mechanical seal. The SCRAM was initiated since leakage was discovered by a rising trend in drywell unidentified leakage during plant startup. The seal had been replaced during the maintenance outage. The SCRAM was selected as the preferred method of shutting down the reactor due to low decay heat conditions following the outage.

ENS 51895 was submitted on April 30, 2016, as required by 10 CFR 50.72 (b)(2)(iv)(B). This issue is reportable under 10 CFR 50.73(a)(2)(iv)(A), for any event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph 10 CFR 50.73(a)(2)(iv)(B).

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NARRATIVE

Description of Event

On April 30, 2016, during the plant startup from 1M38 at approximately 1422 hours, the station identified a rise in Unidentified Leak Rate (UILR). UILR rose from 0.21 gpm to 1.62 gpm at 1545 hours. During this time reactor pressure was increased from 335 psi to 450 psi. As part of the troubleshooting for the unexpected rise in UILR, inspections in the drywell were performed and identified primary coolant leaking from the pump shaft of the 'D' Reactor Recirculation pump (RRP). At 1804 hours, Control Room Operators initiated a manual SCRAM of the reactor to place the plant in a safe condition due to the leakage on the 'D' RRP.

Assessment of Safety Consequences

Following the manual SCRAM actuation, all systems responded as expected; therefore, this event is of low safety significance.

Cause of Event

In mid- 2015, unidentified drywell leak rate along with temperature and pressure trends on the 'D' RRP indicated degradation of the pump seal. The leakage was monitored for several months and remained within the limitations delineated by the Station's Technical Specifications (TS). In order to ensure that the condition did not degrade further, a maintenance outage (1M38) was scheduled to commence on April 25, 2016, with the replacement of the 'D' RRP seal as the main focus of the scope of work.

During 1M38 on April 27, 2016, the old 'D' RRP seal was removed and the new replacement seal was installed. During the installation, the technicians discovered that the pump coupling could not be installed because it was too tall to fit onto the seal. The pump vendor then recommended machining the coupling and that minor machining is part of the normal fit-up process when installing new seal components. Additionally, the pump installation procedure specifically states that machining of up to 0.060" is permitted. Engineering prepared, approved and issued a technical evaluation to maintenance to machine the coupling to 0.060". The backing ring functions as a keeper for the O-ring on the shaft sleeve. Following this machining, the coupling fit and reassembly of the pump was completed.

Following completion of the maintenance work on the 'D' RRP and during the startup from 1M38, Control Room Operators identified a rising trend in UILR. UILR rose from 0.21 gpm to 1.62 gpm as reactor pressure was increased from 335 psi to 450 psi. Inspections conducted inside the drywell, identified primary coolant leaking from around the pump shaft of the 'D' RRP. At 1804 hours, a manual SCRAM of the reactor was initiated to place the plant in a safe condition due to the leakage on the 'D' RRP.

Following the SCRAM and during the disassembly of the 'D' RRP, when removing the pump half coupling keys the shaft sleeve O-ring was found extruding on top of the back-up ring. Upon further disassembly the O-ring was found to be cut, and an approximately one-inch piece of the O-ring was found sitting on top of the back-up ring, which lead to the leakage from the seal cavity.

The Root Cause of the event was determined to be that the seal rebuild procedure was not properly revised in 2012 to prevent this failure from occurring.

Corrective Actions

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NARRATIVE

- A Failure Mode analysis was conducted and implemented to determine the cause of the failure.
- The failed seal was replaced and tested satisfactorily.
- A Root Cause Evaluation was conducted.
- RRP seal replacement procedures will be revised to include critical dimension specifications with verifications and signoffs.
- Lessons learned have been communicated to Station Supervision.

Previous Occurrences

There were no previous occurrences of seal leakage resulting in manual SCRAM at Oyster Creek although several similar issues have been identified throughout the industry.