

RA-14-077

10 CFR 50.73

September 9, 2014

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

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

Subject: Licensee Event Report (LER) 2014-001-00, Manual Scram due to Lowering Vacuum

Enclosed is LER 2014-001-00, Manual Scram due to Lowering Vacuum. 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 letter, please contact Mike McKenna, Regulatory Assurance Manager, at (609) 971-4389.

Respectfully,

Jeffrey P. Døstal Plant Manager Oyster Creek Nuclear Generating Station

Enclosure: NRC Form 366, LER 2014-001-00

cc: Administrator, NRC Region 1 NRC Senior Resident Inspector - Oyster Creek Nuclear Generating Station NRC Project Manager - Oyster Creek Nuclear Generating Station

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NRC FORM 366A

(10-2010)

## **U.S. NUCLEAR REGULATORY COMMISSION** LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE		
Oveter Crock Unit 1	05000219	YEAR	SEQUENTIAL NUMBER	REV NO.	2	OF	2
Oyster Creek, Unit 1		2014	- 001 -	00		OF	3

NARRATIVE

## **Plant Conditions Prior To Event**

Event Date: July 11, 2014 Unit 1 Mode: Run

Event Time: 0314 EDT Power Level: 56%

## **Description of Event**

Reactor Startup from the 1F34 Forced Outage began at 2026 hours on 07/09/14 with criticality achieved at 0125 hours on 07/10/14. At 1830 on 7/10/14, with Reactor Power at approximately 10% of rated thermal power (RTP), condenser vacuum was fully established and stabilized at approximately 28.7" H2O. On July 11, 2014 at approximately 0312 EDT, during reactor power ascension, with reactor power at approximately 56% RTP, main condenser vacuum began to degrade. ABN 14, Loss of Condenser Vacuum, was entered due to the degrading condenser vacuum. Reactor power was lowered to approximately 44% in an attempt to stabilize plant conditions. Vacuum continued to degrade and at 0314, a manual reactor SCRAM was inserted when condenser vacuum degraded below 23.5" H2O.

Following the reactor scram, operations and maintenance personnel identified two holes, one approximate 2"x6" and the other approximate 2"x3", on the last convolute of the downstream side of Y-1-26 ('B' Condenser Steam Inlet Expansion Joint).

## Analysis of Event

The basic function of the expansion joint, Y-1-26 (Sola Basic Industries, model 97-5516) is to provide a flexible pressure retaining connection to absorb motion in the system caused by thermal expansion and low levels of vibration. The need to be flexible requires the expansion joint to be fabricated from 1/32" (wall thickness) commercial grade stainless steel A240 type 304. The design of the expansion joint is such that an upstream and a downstream bellows in series work together to account for the required lateral movements.

On October 6, 2013, the upstream bellows was repaired due to a circumferential fracture. Between October 7, 2013 and July 09, 2014 the upstream fracture in the bellows was repaired with standard fiberglass wraps, high temperature carbon fiber wraps, and the application of Belzona. Repeated wrapping of the upstream side of the bellows most likely restricted the allowable movements of that bellows, requiring the downstream bellows to account for the additional movement.

Additionally, in July 2014, a reheater relief valve (V-1-132) upstream of the bellows (Y-1-26) was confirmed to be leaking past its seat. The combination of the leak-by of the relief valve with the restricted movement of the bellows created increased fatigue on the downstream bellows.

Inspection of the 2"x6" hole showed a circumferential fracture from end to end of one of the three bellow convolutions. There was also a tangential fracture at the 2"x3" hole on the same bellow convolution. A review of photos of the failure along with discussions with Subject Matter Experts (SMEs) from Exelon Corporate engineering determined the likely cause of the failure to be from fatigue cracking.

	CONTINUATIO	N SHEET					
1. FACILITY NAME	2. DOCKET	6. LE	3. PAGE				
Oyster Creek, Unit 1	05000219	YEAR	EQUENTIAL NUMBER	REV NO.	3	OF	3
		2014 -	001 -	00			
IARRATIVE							
Cause of Event							
Cause of Event							
Upon completion of an Equipment A the bellows failure was fatigue failure leak repairs and a leaking relief valve leading to the failure of the unwrappe	e due to additional loadin e causing induced vibrati	g of the downs on which accel	tream belloverated the t	ws cause	ed by the	e repeat	
Corrective Actions							
The expansion joint (Y-1-26) and the	e relief valve (V-1-132) we	ere replaced.					
Previous Occurrences							
Licensee Event Report, LER-2013-0	02, was submitted in the	last two years.					
Component Data							
Component	IEEE 805 Syst	em ID	IEEE 8	03A Com	nponent		
Expansion Joint	SM			EXJ			