Oyster Creek Generating Station Route 9 South PO Box 388 Forked River, NJ 08731 www.exeloncorp.com

RA-09-070

10 CFR 50.73

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Nuclear

September 10, 2009

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) 2009-005-00, Reactor Scram Following a Transmission Line Lightning Strike

Enclosed is LER 2009-005-00, Reactor Scram Following a Transmission Line Lightning Strike. 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. The detailed analysis of the event, determination of the cause of the affected transmission line breaker failure and circumstances surrounding the event is being investigated and will be reported in a supplement to this LER.

Should you have any questions concerning this letter, please contact Richard Milos, Regulatory Assurance, at (609) 971-4973.

Respectfully,

Muluel & Masian

Michael J. Massaro Vice President Oyster Creek Nuclear Generating Station

Enclosure: NRC Form 366, LER 2009-005-00

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

NRC FOR	M 266							SSION	APP	BOVE		NO 3150-010	4	EXPIRES	08/31/2010	
U.S. NUCLEAR REGULATORY COMMISSION (9-2007) LICENSEE EVENT REPORT (LER)								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 Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.ov.and to the Desk Officer of Information								
(See reverse for required number of digits/characters for each block)								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 Oyster Creek, Unit 1								2. D	OCKE (OCKET NUMBER 3. PAGE 05000219 1			OF 3	OF 3		
4. TITLE Rea	actor S	cram Fo	ollowing	g a Transm	issior	I Line Lig	ghtning S	Strike					<u>_</u>			
5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FA			OTHER FAC	LITIES INV	DLVED	VED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	F	ACILITY				DOCKET	NUMBER N/A	
07	12	2009	2009	- 005 -	00	09	10	2009)	ACILITY		N/A		DOCKET	NUMBER N/A	
9. OPER	9. OPERATING MODE 11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)															
N 10. POWER LEVEL			 20.2201(b) 20.2201(d) 20.2203(a)(1) 20.2203(a)(2)(i) 20.2203(a)(2)(ii) 			 20.2203(a)(3)(i) 20.2203(a)(3)(ii) 20.2203(a)(4) 50.36(c)(1)(i)(A) 50.36(c)(1)(ii)(A) 			□ 50.7 □ 50.7 □ 50.7 □ 50.7 □ 50.7 ⊠ 50.7		50.73(a) 50.73(a) 50.73(a) 50.73(a) 50.73(a)	(2)(i)(C) (2)(ii)(A) (2)(ii)(B) (2)(iii) (2)(iv)(A)	□ 50.73(a)(2) □ 50.73(a)(2) □ 50.73(a)(2) □ 50.73(a)(2) □ 50.73(a)(2) □ 50.73(a)(2)		!)(vii) !)(viii)(A) 2)(viii)(B) 2)(ix)(A) 2)(x)	
100			 ☐ 20.2203(a)(2)(iii) ☐ 20.2203(a)(2)(iv) ☐ 20.2203(a)(2)(v) ☐ 20.2203(a)(2)(vi) 			 50.36(c)(2) 50.46(a)(3)(ii) 50.73(a)(2)(i)(A) 50.73(a)(2)(i)(B) 				☐ 50.73(a)(2)(v)(A) ☐ 50.73(a)(2)(v)(B) ☐ 50.73(a)(2)(v)(C) ☐ 50.73(a)(2)(v)(D)		 73.71(a)(4) 73.71(a)(5) OTHER Specify in Abstract below or in NRC Form 366A 				
FACILITY	12. LICENSEE CONTACT FOR THIS LER FACILITY NAME TELEPHONE NUMBER (Include Area Code)															
James	James Barstow, Regulatory Assurance Manager (609) 971-4947															
	13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT															
CAUSE SYSTEM		SYSTEM	СОМРС	NENT FACT	NT FACTURER		REPORTABLE TO EPIX		CAUSE		SYSTEM	COMPONENT	MANU- FACTUREF	REP	ORTABLE O EPIX	
X	x		BKR G080		Y			N/A		N/A	N/A	N/A		N/A		
		14	. SUPPLEMENTAL REPORT EXPE				CTED				15. E SUB	XPECTED MISSION	MONTH	DAY	YEAR	
YES (If yes, complete 15. EXPECTED SUBMISSION DATE)							NO			DATE	11	10	2009			
ABSTRA	CT (Lim	nit to 1400	spaces,	i.e., approxin	nately 1	5 single-s	paced type	ewritten	lines)			;			
	On July 12, 2009 with the Unit at 100% power in the "Power Operation" mode, a severe electrical storm resulted in multiple lightning strikes on an interconnected 34.5 kV offsite transmission line. These lightning strikes in conjunction with a failure of a line breaker to open caused grid disturbances, a main generator trip on over-excitation, an automatic reactor scram due to high pressure from the load rejection, and a loss of offsite power to the Startup Transformers.															
When the plant experienced the loss of offsite power to the Startup Transformers, both Emergency Diesel Generators (EDGs) started to energize their associated safety related buses. During the event, EDG #1 was slow to tie onto its safety-related bus and the erratic "B" Isolation Condenser (IC) level indication resulting in operators declaring the IC inoperable. A Main Steam Isolation Valve (MSIV) actuation occurred due to loss of offsite power resulting in IC and Electrical Mechanical Relief Valve (EMRV) actuations. A shutdown cooling room high temperature indication resulted in secondary containment control EOP entry. An Unusual Event was declared for the loss of power to the Startup Transformers for greater than 15 minutes. All declarations and notifications were made correctly and in a timely manner.																
This event is being reported pursuant to 10CFR50.73(a)(2)(iv)(A) due to automatic actuation of the reactor protection system. The cause of the breaker failure is being investigated and will be reported in a supplemental LER.																

NRC FORM 366A (9-2007)	LICENSEE EVENT F CONTINUATIO	REPORT (LER) N SHEET	LEAR REG	ULATORY COMMIS	SSION	
1. FACILITY NAME	2. DOCKET		3. PAGE			
Ovster Creek, Unit 1	05000219	YEAR SEQUENTIAL	REV NO.	2 OF	3	
		2009 - 005 -	00			
NARRATIVE						
Plant Condition Prior to Event Event Date: July 12, 2009 Unit 1 Mode: Power Operation	Event Ti Power L	me: 0135 EDT evel: 100%				

Description of Event

Note: Energy Industry Identification System (EIIS) codes are identified in the following text in brackets as [XX].

On July 12, 2009, a severe electrical storm resulted in multiple lightning strikes on the Q121 transmission line. The affected line is a feed to the 34.5 kV Oyster Creek substation, which then feeds the Oyster Creek Startup Transformers [XFMR]. The lightning strikes in conjunction with a failure of a transmission line breaker [BKR] to open caused grid disturbances, a main generator [GEN] trip on over-excitation with subsequent automatic reactor scram (Turbine Trip), and a loss of offsite power to the Startup Transformers [XFMR].

When the plant experienced the loss of offsite power to the Startup Transformers, both EDGs started and energized their associated safety related buses. Two post-scram anomalies were associated with this event. EDG #1 took longer than expected to auto sync to its safety-related bus, and erratic "B" IC level indication.

Unusual Event MU-1 was declared for the loss of power to the Startup Transformers SA and SB for greater than 15 minutes. All declarations and notifications were made correctly and in a timely manner. The Unusual Event was terminated at 0405 on July 12, 2009 after restoration of offsite power.

Analysis of Event

This event is reportable under the provisions of 10CFR50.73(a)(2)(iv)(A) as an event that resulted in an automatic actuation of the reactor protection system [JC]. There were no safety consequences impacting the plant or public safety as a result of this event.

Two post-scram anomalies were noted with EDG #1 output breaker impacting the auto sync time and the "B" IC erratic level indication. Neither anomaly was considered a safety system functional failure. All other safety systems, structures, and components operated normally during this event. The detailed analysis of this event is under investigation and will be included in a Supplemental LER.

Cause of Event

The 34.5 kV, Q-121 transmission line was struck by lightning. The lightning strike broke the carrier/static line, resulting in a three-phase-to-ground fault. The Q-121 line breaker at Oyster Creek failed to open on the line fault resulting in the Oyster Creek generator feeding the fault until backup line breakers opened and isolated the line. These grid disturbances caused voltage swings and when the backup line breakers eventually isolated the Q-121 fault, switchyard voltage increased rapidly and the Oyster Creek generator tripped on over-excitation. The turbine-generator trip resulted in an automatic reactor scram (Turbine Trip).

The turbine-generator trip and resultant reactor scram was caused by a failure of the Q-121 line breaker to isolate the faulted transmission line following damage caused by lightning strike. The cause of the line breaker failure is still under investigation and will be included in a Supplemental LER. The line breaker is owned and maintained by First Energy (transmission system operator).

1. FACILITY NAME	2. DOCKET		3. PAGE				
Ovstar Crook Unit 1	05000219	YEAR	SEQUENTIAL NUMBER	REV NO.	3	OF	3
Oyster Oreek, Onit T	05000219	2009	- 005 -	00		01	5

NARRATIVE

Corrective Actions

The detailed analysis and cause determination is still under investigation. Complete descriptions of corrective actions will be included in a Supplemental LER. Corrective actions taken to date include, restoring the EDG #1 to full operable status, flushing the "B" IC level indication lines and repairing the Q-121 line breaker. These actions addressed the anomalies noted above.

The Q-121 line breaker was repaired by First Energy. Any lessons learned from that repair and the cause determination will be placed in Oyster Creek's corrective action program database.

Previous Occurrences

There have been no similar LERs submitted due to lightning strikes at Oyster Creek in the last three years. However, there was a lighting strike in June 2009 on the Q-121 transmission line, which resulted in a less severe grid disturbance and no plant scram occurred.

Component Failure Data

Component: Transmission Line Breaker Manufacturer: General Electric Serial No: NA Cause: Trip Coil Misaligned