



# Exelon Generation®

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PO Box 388  
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RA-14-013

**10 CFR 50.73**

February 12, 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) 2013-004-00, Manual SCRAM due to rise in  
Reactor Pressure during Turbine Valve Testing

Enclosed is LER 2013-004-00, Manual SCRAM due to rise in Reactor Pressure during Turbine Valve Testing. 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,

Russell R. Peak  
Plant Manager  
Oyster Creek Nuclear Generating Station

Enclosure: NRC Form 366, LER 2013-004-00

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

IE22  
NRR



**LICENSEE EVENT REPORT (LER)**

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

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.

<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**  
Manual SCRAM due to rise in Reactor Pressure during Turbine Valve Testing

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
12	14	2013	2013	004	00	02	12	2014	N/A	N/A
									FACILITY NAME	DOCKET NUMBER
									N/A	N/A

<b>9. OPERATING MODE</b>	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)</b>			
N	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
<b>10. POWER LEVEL</b>  95	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<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)(C)	<input type="checkbox"/> OTHER
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

**12. LICENSEE CONTACT FOR THIS LER**

FACILITY NAME Michael McKenna, Regulatory Assurance Manager	TELEPHONE NUMBER (Include Area Code) (609) 971-4389
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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
D	TG	XC	G080	Y					

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

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

On 12/14/13 at approximately 0336 EST, during quarterly turbine valve testing with reactor power at 95% of rated thermal power, the plant experienced reactor pressure control abnormalities. Turbine Control Valves 2 and 3 failed closed due to the Servo Motor Feedback Support Bracket bolts backing out and falling out thereby requiring a scram. Operators initiated a manual reactor scram due to reactor pressure rising to 1042 psig which approached the scram set point.

These conditions were corrected during 1F33. These were determined during complex troubleshooting as the failures that drove the event. The root cause determined that the manufacturer failed to assemble the Control Valve Hydraulic Enclosure per their design.

There were no safety consequences impacting the plant or public safety as a result of this event. All control rods fully inserted and plant response was as expected. This event is being reported pursuant to 10CFR50.73(a)(2)(iv)(A) due to an actuation of the Reactor Protection System (RPS).



**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 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](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.

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Oyster Creek, Unit 1	05000219	2013	- 004	- 00	2 OF 3

**NARRATIVE**

**Plant Conditions Prior To Event**

Event Date: December 14, 2013  
Unit 1 Mode: Power Operation

Event Time: 0336 EST  
Power Level: 95%

**Description of Event**

On 12/14/13 at approximately 0336 EST, during quarterly turbine valve testing with reactor power at 95% of rated thermal power, the plant experienced reactor pressure control abnormalities. Turbine Control Valves 2 and 3 failed closed due to the Servo Motor Feedback Support Bracket bolts backing out and falling out thereby requiring a scram. Operators initiated a manual reactor scram due to reactor pressure rising to 1042 psig which approached the scram set point.

Turbine Control Valve (TCV) 2 and 3 Servo Motor feedback lever brackets became loose and then detached from their supports. Also identified was that a vertical connection to transmit the required Turbine Bypass Valve (TBV) relay position from the Turbine Front Standard to the Bypass Valve Assembly became detached.

The failure of the TBV control connection was a lack of effective application of vendor maintenance direction. The immediate corrective action was completed as part of 1F33. The TBV clevis and push/pull rod connections were adjusted to meet OEM required minimum thread engagement and the jamb nuts were secured from rotation per OEM vendor recommendation.

**Cause of Event**

The OEM during manufacture did not follow their assembly drawings and installed inappropriate locking mechanisms (split washers) instead of the assembly drawing required parts (lock plates).

The failure of the TBV control connection was a lack of effective application of vendor maintenance direction. The resulting investigation determined that the primary failures associated with TCV-2/3 inside the Control Valve Hydraulic Enclosure (CVHE) (General Electric Part number 715E847) were due to a lack of the equipment configuration to meet OEM requirements.

The root cause determined that the manufacturer failed to assemble the Control Valve Hydraulic Enclosure per there design.

**Analysis of Event**

This issue resulted in a manual reactor SCRAM with the ensuing 1F33 forced outage. Without operator intervention this issue would have further challenged the equipment, operating margin and regulatory margin by driving an automatic SCRAM on high reactor pressure. This event necessitated a reactor cool down to be performed with the Isolation Condensers instead of the Turbine Bypass Valves due to Bypass Valve unavailability. There were no significant equipment problems noted related to maintaining the reactor in a safe Cold Shutdown Condition.

There were no safety consequences impacting the plant or public safety as a result of this event. All control rods fully inserted and plant response was as expected. This event is being reported pursuant to 10CFR50.73(a)(2)(iv)(A) due to an actuation of the Reactor Protection System (RPS).

**LICENSEE EVENT REPORT (LER)  
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**NARRATIVE**

**Corrective Actions**

The immediate corrective actions were completed as part of 1F33 which were to adjust the TBV clevis and push/pull rod connections to meet OEM required minimum thread engagement and secure the jamb nuts from rotation per OEM vendor recommendation. The corrective action was completed as part of 1F33 to implement OEM vendor design and install lock plate securing mechanisms as per vendor documentation.

The root cause determined that the manufacturer failed to assemble the Control Valve Hydraulic Enclosure per there design. Procedures are being revised to inspect for the correct configuration per the GE assembly drawings to ensure any replaced parts will maintain this configuration. PMs, specifications, and procedures that inspect, adjust, or replace the turbine control linkages are being revised to include minimum thread engagement and appropriate torque methods and values.

**Previous Occurrences**

There have been no similar Licensee Event Reports associated with this component failure submitted at OCNCS in the last two years.

**Component Data**

Component	IEEE 805 System ID	IEEE 803A Component
Control Valve Hydraulic Enclosure	TG	XC