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10 CFR 50.73

November 10, 2004
2130-04-20232

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

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

Subject: Licensee Event Report 2004-005-00, Main Steam Isolation Valve Failed to Close During Partial Valve Closure Surveillance Due to Mechanical Binding

Enclosed is Licensee Event Report 2004-005, Revision 0. This event did not affect the health and safety of the public or plant personnel. There was no safety system functional failure associated with this event.

If any further information or assistance is needed, please contact David Fawcett at 609-971-4284.

Sincerely,



C. N. Swenson
Vice President, Oyster Creek Generating Station

CNS/DIF
Attachment 1: List of Regulatory Commitments

cc: S. J. Collins, Administrator, USNRC Region I
P. S. Tam, USNRC Senior Project Manager, Oyster Creek
R. J. Summers, USNRC Senior Resident Inspector, Oyster Creek
File No. 04112

IE22

ATTACHMENT 1

SUMMARY OF AMERGEN ENERGY CO. LLC COMMITMENTS

The following table identifies commitments made in the document by AmerGen Energy Co. LLC (AmerGen). Any other actions discussed in this submittal represent intended or planned actions by AmerGen. They are described to the NRC for the NRC's information and are not regulatory commitments.

COMMITMENT	COMMITTED DATE OR "OUTAGE"
Schedule and install the poppet backseat modification on all remaining MSIVs. (NS03B was completed in 1998 (17R), NS04A was completed prior to restart from 1F07, NS03A is scheduled for 1R20, and NS04B is scheduled for 1R21)	11/30/2006
Fully develop the stem strain gauge testing technique for MSIV testing to monitor rib wear. Institutionalize the testing in the form of a preventive maintenance or surveillance test program	03/30/2005

LICENSEE EVENT REPORT (LER)

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

Estimated burden per response to comply with this mandatory collection request: 50 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.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 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. DOCKET NUMBER

05000 219

3. PAGE

1 OF 4

4. TITLE

Main Steam Isolation Valve Failed to Close During Partial Valve Closure Surveillance Due to Mechanical Binding

5. EVENT DATE

MONTH	DAY	YEAR
09	11	2004

6. LER NUMBER

YEAR	SEQUENTIAL NUMBER	REV NO
2004	005	00

7. REPORT DATE

MONTH	DAY	YEAR
11	10	2004

8. OTHER FACILITIES INVOLVED

FACILITY NAME	DOCKET NUMBER
	05000

FACILITY NAME	DOCKET NUMBER
	05000

9. OPERATING MODE

N

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

☐ 20.2201(b)☐ 20.2201(d)☐ 20.2203(a)(1)☐ 20.2203(a)(2)(i)☐ 20.2203(a)(2)(ii)☐ 20.2203(a)(2)(iii)☐ 20.2203(a)(2)(iv)☐ 20.2203(a)(2)(v)☐ 20.2203(a)(2)(vi)☐ 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)☐ 50.36(c)(2)☐ 50.46(a)(3)(ii)☐ 50.73(a)(2)(i)(A)☒ 50.73(a)(2)(i)(B)☐ 50.73(a)(2)(i)(C)☐ 50.73(a)(2)(ii)(A)☐ 50.73(a)(2)(ii)(B)☐ 50.73(a)(2)(iii)☐ 50.73(a)(2)(iv)(A)☐ 50.73(a)(2)(v)(A)☐ 50.73(a)(2)(v)(B)☐ 50.73(a)(2)(v)(C)☐ 50.73(a)(2)(v)(D)☐ 50.73(a)(2)(vii)☐ 50.73(a)(2)(viii)(A)☐ 50.73(a)(2)(viii)(B)☐ 50.73(a)(2)(ix)(A)☐ 50.73(a)(2)(x)☐ 73.71(a)(4)☐ 73.71(a)(5)☐ OTHER☐ Specify in Abstract below
or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME

David Fawcett, Licensing Engineer

TELEPHONE NUMBER (Include Area Code)

(609) 971-4284

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
E	SB	ISV	A&M	Y					

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES (If yes, complete EXPECTED SUBMISSION DATE)☒ NO15. EXPECTED
SUBMISSION
DATE

MONTH

DAY

YEAR

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

On Saturday, September 11, 2004, with the plant in the Run Mode at 100% power, the outboard Main Steam Isolation Valve (MSIV) NS04 failed the 10% MSIV closure test. A 24 hour TS LCO was entered at 0930. To verify operability of the valve, plant power was reduced to 40% power and the MSIV full closure test was performed at 1747. This test also failed. At 1823 the inboard MSIV NSO3A was isolated and electronically locked in place due to the NS04A being inoperable. With power maintained at approximately 40%, a complex troubleshooting plan was performed that concluded the valve was stuck open due to an internal problem. A plant shutdown was performed on September 14, 2004 to repair the MSIV.

Internal inspection of the valve determined the failure of the poppet to close was caused by excessive rib and poppet guide wear resulting from poppet vibration induced by steam flow.

All safety systems were fully operable and the safety significance of this event is considered minimal based on the demonstrated capability of the inboard MSIV NSO3A to fully close.

No other MSIV failures caused by rib wear were identified. LER 88-013, occurred on July 9, 1988 when inboard MSIV (NSO3A) failed the then quarterly full closure test due to stem failure caused by poppet vibration.

LICENSEE EVENT REPORT (LER)

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		2004	- 005	- 00	

17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

Description of Event

On Saturday, September 11, 2004, with the plant in the Run Mode at 100% power, the outboard Main Steam Isolation Valve (MSIV) (EIS SB-ISV) NS04 failed to produce a half scram signal as expected during the quarterly 10% MSIV closure test. A 24 hour shutdown TS LCO was entered at 0930. To verify operability of the valve, plant power was reduced to 40% power and the MSIV full closure test was performed at 1747. This test also failed and NS04A was declared inoperable. At 1823 the inboard MSIV NS03A was isolated and electronically locked in place due to the NS04A being inoperable per Technical Specifications action requirements.

With power maintained at approximately 40%, a complex troubleshooting plan was performed including the use of strain gauges that concluded the valve was stuck open due to an internal problem. A plant shutdown was performed on September 14, 2004 to repair the MSIV.

Internal inspection of the valve determined the failure to close was caused by excessive rib and poppet guide wear resulting from poppet vibration induced by steam flow. The MSIV was repaired and the GE SIL 568 recommended poppet backseat modification was also performed to prevent recurrence of this event on NS04A.

This event is reportable per 10 CFR 50.73(a)(2)(i)(B), any operation or condition which was prohibited by Technical Specifications.

Analysis of Event

This event was significant in that it required shutdown of the plant to verify the cause and repair the failed MSIV. The failure mode was also determined to be a common mode that could have affected redundant safety system components.

The MSIVs are containment isolation valves designed to minimize coolant loss from the reactor vessel, and the resulting offsite dose, in the event of a Main Steam Line Break Accident. Two isolation valves are installed in each of the two 24 inch main steam lines, in parallel horizontal runs that penetrate the drywell through 36-inch diameter openings.

This event caused the loss of the containment isolation safety function for one of two redundant components, the outboard MSIV in the "A" Main Steam Line, however that release pathway would have been successfully isolated by the full closure of the inboard MSIV NS03A on a reactor isolation signal. The MSIV safety function of reactor and primary containment isolation were not lost during this event since NS03A, the redundant MSIV was capable of performing the steam line isolation function, as required.

Therefore the safety significance of this event is minimal.

LICENSEE EVENT REPORT (LER)

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17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

Cause of Event

The common mode failure for this event was damage to the lower rib guide and main poppet guide ring caused by poppet vibration induced by steam flow.

Further investigation has determined that the root cause of this event was untimely implementation of all of the GE SIL 568 recommendations to reduce damage to the MSIVs due to steam flow induced vibration.

Corrective Actions:

Immediate and Interim Corrective Actions

1. Installed poppet back seating modification in NS04A during 1F07. (Complete)
2. Perform repairs to the guide ribs and poppet of NS04A prior to startup from F07. Reference: (Complete)
3. Develop an interim trending technique for detecting rib guide wear for use during 1F07 to verify MSIV operability prior to startup. (Complete)
4. Complete interim trend testing (strain gauge) on all MSIVs and verify acceptability for restart. (Complete)
5. Ensure that the poppet backseat modification for NS04B is scheduled as a 1R20 contingency and installed if the valve is disassembled. (prior to restart from 1R20)

Corrective Actions to Prevent Recurrence

1. Schedule and install the poppet backseat modification on all remaining MSIVs. (NS03B was completed in 1998 (17R), NS04A was completed prior to restart from 1F07, NS03A is scheduled for 1R20, and NS04B is scheduled for 1R21). Date: 11/30/2006
2. Fully develop the stem strain gauge testing technique for MSIV testing to monitor rib wear. Institutionalize the testing in the form of a preventive maintenance or surveillance test program. Date: 3/30/2005

LICENSEE EVENT REPORT (LER)

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17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

Additional Information

A. Failed Components:

Main Steam Isolation Valve (NS04A) was manufactured by Atwood and Morrill (A&M)

B. Previous similar events:

No other MSIV failures caused by rib wear were identified. LER 88-013, MSIV (NS03A) stem failure caused by poppet vibration.

C. Identification of components referred to in this Licensee Event Report:

Components	IEEE 805 System ID	IEEE 803A Function
MSIV	SB	ISV