

10 CFR 50.73

July 13, 2004
2130-04-20141

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 2004-001-00: # 1 EDG Inoperable Caused by
Cooling Fan Bearing Bolts Not Torqued Properly Following Preventative
Maintenance Activities

Enclosed is Licensee Event Report 2004-001, Revision 0. This event did not affect the
health and safety of the public or plant personnel.

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
Enclosure

cc: H. J. Miller, Administrator, USNRC Region I
P. S. Tam, USNRC Senior Project Manager, Oyster Creek
R. J. Summers, USNRC Senior Resident Inspector, Oyster Creek
File No. 04104

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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"
Evaluate and create PM tasks for the 24-month diesel inspection, including the specific tasks identified in the "Component Replacement Schedule" (Appendix 1, page E2-1) of Surveillance Test (ST) 636.1.010.	01/31/2005
Revise the ST and the applicable vendor Maintenance Instructions into Level 1 (Continuous Use) Maintenance Procedures. These procedures should provide the necessary details, verifications and human factoring. In addition, data sheets for entering readings such as "as left" torque values; clearances, M&TE and other pertinent information should be provided.	03/31/2005
Planners will be trained and reinforced in the expectation to provide torque specifications and appropriate verifications in work packages.	10/31/2004
A follow up work package quality assessment will be performed prior to the upcoming refuel outage (1R20).	08/31/2004

LICENSEE EVENT REPORT (LER)

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

Estimated burden per response to comply with this mandatory information 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 Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to bjs1@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 05000219	3. PAGE 1 OF 4
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4. TITLE
1 EDG Inoperable Caused by Cooling Fan Bearing Bolts Not Torqued Properly Following Preventative Maintenance

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
05	17	2004	2004	- 001 -	00	07	13	2004	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)									
10. POWER LEVEL 100	20.2201(b)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(B)		50.73(a)(2)(ix)(A)			
	20.2201(d)		20.2203(a)(4)		50.73(a)(2)(iii)		50.73(a)(2)(x)			
	20.2203(a)(1)		50.36(c)(1)(i)(A)		50.73(a)(2)(iv)(A)		73.71(a)(4)			
	20.2203(a)(2)(i)		50.36(c)(1)(ii)(A)		50.73(a)(2)(v)(A)		73.71(a)(5)			
	20.2203(a)(2)(ii)		50.36(c)(2)		50.73(a)(2)(v)(B)		OTHER			
	20.2203(a)(2)(iii)		50.46(a)(3)(ii)		50.73(a)(2)(v)(C)					
	20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)		50.73(a)(2)(v)(D)					
	20.2203(a)(2)(v)		X 50.73(a)(2)(i)(B)		50.73(a)(2)(vii)					
20.2203(a)(2)(vi)		50.73(a)(2)(i)(C)		50.73(a)(2)(viii)(A)						
20.2203(a)(3)(i)		50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(B)						

12. LICENSEE CONTACT FOR THIS LER

NAME David Fawcett, Licensing Engineer	TELEPHONE NUMBER (Include Area Code) (609) 971-4284
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13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
A	EK	FAN							

14. SUPPLEMENTAL REPORT EXPECTED				15. EXPECTED SUBMISSION DATE		
YES (If yes, complete EXPECTED SUBMISSION DATE)	X	NO		MONTH	DAY	YEAR

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

On May 17, 2004 at 04:40, at the end of the bi-weekly #1 Emergency Diesel Generator (EDG) (EK – DG) load test an operator reported that the EDG was making an unusual noise and the cooling fan belts and pulleys were observed to be loose. It was also observed that the pillow-block bearing supporting the cooling fan drive shaft and sheave assembly had one bolt missing and one bolt loose. A 7-day Technical Specification LCO was entered at 05:00.

The previous maintenance on the pillow block bearing support occurred about 17 days earlier during the two year overhaul completed in late April 2004. A review of the procedures and documentation that were used to perform the cooling fan maintenance and interviews with the individuals that performed the fan work during the overhaul were conducted. The investigation determined that the pillow block bearing hold down bolts had not been torqued as required by the vendor manual.

All repairs were completed on May 17, 2004 at 17:12. Immediately following the repairs, #1 EDG Load Test was again performed as the cooling fan post-maintenance test and to validate operability. The diesel was declared operable at 20:25.

No previous similar events of improper maintenance activities on the diesel generators leading to loose and missing bolts and fasteners due to improper torquing were identified.

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Oyster Creek, Unit 1	05000219	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 4
		2004	- 001	- 00	

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

Plant Operating Conditions Before the Event:

Oyster Creek was operating in the RUN Mode at 100% power with no safety systems out of service.

Description of Event:

At 03:10 on 05/17/04 Operations commenced the scheduled biweekly #1 EDG Load Test surveillance. During the surveillance, at 04:40, an operator reported that the #1 EDG was making an unusual noise and vibration was noted on the cooling fan belt drive shaft. A field supervisor was dispatched to investigate. Upon evaluating the condition of the fan bearing, the field supervisor advised the control room to secure the diesel. After the diesel was secured, shift entered a 7-day LCO at 05:00.

At approximately 07:30 the Outage Control Center was staffed to support the development of a schedule and prepare a plan to repair the cooling fan pillow block bearing. Parallel to the activities associated with the recovery plan, an investigation into the cause of the cooling fan bearing support loose bolts commenced. Included in the investigation was a review of the total number of hours that the #1 EDG was run since the 24-month inspection in late April, a review of the procedures and documentation that were used to perform the cooling fan maintenance and interviews with the individuals that performed the fan work during the overhaul. In addition, an extent of condition was performed to evaluate other fasteners that could have been disturbed during the 24-month inspection.

A work order and a clearance were prepared to complete the repairs to the cooling fan bearing support. The clearance was applied at approximately 12:20. The scope of the work order included reinstallation and torquing of the cooling fan pillow-block bearing bolts, re-verification of torques that were applied to all disturbed fasteners during the recent inspection and incorporation of other associated minor repairs which had been identified during subsequent #1 EDG walk downs. The pillow block bearing was inspected and reinstalled. No damage to the bearing occurred.

All repairs were completed at approximately 17:12 on May 17 and the clearance was removed. Immediately following the repairs, #1 EDG Load Test was again performed as the cooling fan post-maintenance test and to validate operability. In addition, vibration readings were also taken to ensure no abnormal cooling fan pillow-block bearing frequencies were observed. Normal frequencies were observed with no anomalies noted. The surveillance test was completed satisfactorily and the diesel was declared operable on May 17 at 20:25.

Analysis of Event

There were no actual safety consequences associated with this event. At the time of discovery of the #1 EDG problem, #2 EDG was operable along with all of its associated engineered safeguard loads and capable of performing its safety function.

A 7-day LCO was entered on May 17, 2004 based on TS 3.7.C.2 for one diesel generator inoperable during power operation. An evaluation in accordance with the significance determination process (SDP) of the event is not yet completed. An evaluation of the #1 EDG is in progress to determine if the EDG was operable, but degraded, with the condition that was identified and would have been available for a time sufficient to perform its intended safety function.

LICENSEE EVENT REPORT (LER)

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		2004	- 001	- 00		

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

Cause of Event:

The root cause of this human performance event was the failure of plant personnel to follow the implementing procedure for the Diesel Generator 24-month inspection.

A contributing factor to this event was that individual preventative maintenance (PM) tasks were not prepared in accordance with the guidance in the surveillance test (ST).

Corrective Actions

Interim Actions:

- The loose bolt fasteners on the pillow-block bearing assembly were replaced and torqued to the proper value.
- Extent of condition was performed on all bolted fasteners that were disturbed as part of the 24-month inspection and proper torque values were verified.
- Maintenance Department Stand-down conducted to review expectations for performance and the use of fundamentals to prevent human error.

Long Term Actions:

- Evaluate and create PM tasks for the 24-month diesel inspection, including the specific tasks identified in the "Component Replacement Schedule" (Appendix 1, page E2-1) of Surveillance Test (ST) 636.1.010.
- Revise the ST and the applicable vendor Maintenance Instructions into Level 1 (Continuous Use) Maintenance Procedures. These procedures should provide the necessary details, verifications and human factoring. In addition, data sheets for entering readings such as "as left" torque values; clearances, M&TE and other pertinent information should be provided.
- Planners will be trained and reinforced in the expectation to provide torque specifications and appropriate verifications in work packages.
- A follow up work package quality assessment will be performed prior to the upcoming refuel outage (1R20).

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Oyster Creek, Unit 1	05000219	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	4 OF 4	
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17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

Additional Information

A. Failed Components:

No components were damaged other than the threads on one of the bolts. Examination of the bearing revealed no damage and after reassembling the components the #1 EDG was successfully run for surveillance, examined for vibrations and determined to be operable.

B. Previous similar events:

None.

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

Components	IEEE 805 System ID	IEEE 803A Function
Emergency Diesel Generator	EK	DG