



Entergy Nuclear Operations, Inc.
Palisades Nuclear Plant
27780 Blue Star Memorial Highway
Covert, MI 49043
Tel 269 764 2000

December 03, 2008

10 CFR 50.73

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

Palisades Nuclear Plant
Docket 50-255
License No. DPR-20

Licensee Event Report 08-006, Emergency Diesel Generator Inoperable in Excess of Technical Specification Requirements

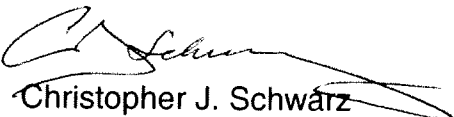
Dear Sir or Madam:

Licensee Event Report (LER) 08-006 is enclosed. The LER describes the inoperability of emergency diesel generator 1-2 for a period of time longer than allowed by Technical Specifications and as a condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident.

This LER is being submitted in accordance with 10 CFR 50.73(a)(2)(i)(B) and 10 CFR 50.73(a)(2)(v)(D).

Summary of Commitments

This letter contains no new commitments and no revisions to existing commitments.


Christopher J. Schwarz
Site Vice President
Palisades Nuclear Plant

Enclosure (1)

CC Administrator, Region III, USNRC
Project Manager, Palisades, USNRC
Resident Inspector, Palisades, USNRC

ENCLOSURE 1

LER 08-006

**EMERGENCY DIESEL GENERATOR INOPERABLE
IN EXCESS OF TECHNICAL SPECIFICATION REQUIREMENTS**

4 Pages Follow

1. FACILITY NAME PALISADES NUCLEAR PLANT	2. DOCKET NUMBER 05000255	3. PAGE 1 OF 4
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4. TITLE
Emergency Diesel Generator Inoperable in Excess of Technical Specification Requirements

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
10	09	2008	2008	006	00	12	03	2008	FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE 1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)			
10. POWER LEVEL 100	<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)
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input 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 checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input checked="" 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 Laurie Lahti	TELEPHONE NUMBER (Include Area Code) (269) 764-2788
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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
E	EK	DG	F010	N					

14. SUPPLEMENTAL REPORT EXPECTED <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On October 9, 2008, Entergy Nuclear Operations, Inc. (ENO) engineering personnel completed a past operability evaluation that concluded during the 30 days between January 21, 2008, and February 19, 2008, emergency diesel generator (EDG) 1-2 would have been unable to operate satisfactorily for the EDG's required 30-day mission time. Therefore, it was inoperable. This period of inoperability corresponds to the time from when the Technical Specification (TS) surveillance test for EDG 1-2 was completed satisfactorily and ENO maintenance personnel discovered fragments of metal (broken pieces of a valve seat spring lock) in various locations throughout the valve assembly area of EDG 1-2 cylinder head, 2L.

Consequently, the required actions and associated completion times of TS 3.8.1, condition B, were not met. Additionally, during the period EDG 1-2 was inoperable, EDG 1-1 was inoperable for approximately three hours for the performance of monthly surveillance testing. Therefore, both EDGs were simultaneously inoperable for a period of time longer than the two hours allowed by TS 3.8.1, condition E.

This occurrence is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications and 10 CFR 50.73(a)(2)(v)(D) as a condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident.

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CONTINUATION SHEET**

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EVENT DESCRIPTION

On February 19, 2008, during performance of planned maintenance on the 1-2 emergency diesel generator (EDG) [DG;EK] to replace eight snubber valves, Entergy Nuclear Operations, Inc. (ENO) maintenance personnel at the Palisades Nuclear Plant (PNP) discovered foreign material (fragments of metal) in various locations throughout the valve assembly area of EDG 1-2 cylinder head, 2L. The fragments of metal were identified as broken pieces of the valve seat spring lock associated with the 2L inboard exhaust valve.

On October 9, 2008, ENO engineering personnel completed a past operability evaluation that concluded during the 30 days between January 21, 2008, and February 19, 2008, EDG 1-2 would have been unable to operate satisfactorily for the EDG's required 30-day mission time. Therefore, it was inoperable. This period of inoperability corresponds to the time from when the Technical Specification (TS) surveillance test for EDG 1-2 was completed satisfactorily to when ENO maintenance personnel discovered the broken pieces of a valve seat spring lock.

Consequently, the required actions and associated completion times of TS 3.8.1, condition B, were not met. Failure to meet TS 3.8.1 condition B, necessitates entry into TS 3.8.1, condition F, that requires the plant to be in Mode 3 within six hours and in Mode 5 within thirty-six hours. Additionally, during the period EDG 1-2 was inoperable, EDG 1-1 was inoperable for approximately three hours for the performance of monthly surveillance testing. Therefore, both EDGs were simultaneously inoperable for a period of time longer than the two hours allowed by TS 3.8.1, condition E. This condition represents a safety system functional failure.

This occurrence is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications and 10 CFR 50.73(a)(2)(v)(D) as a condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident.

CAUSE OF THE EVENT

The 1-2 EDG is a Fairbanks Morse/ALCO, Model 251F, V-18 cylinder engine of the four-stroke cycle type. Each cylinder head bolts to the engine block and contains four valves. Per design, each valve is held in the closed position by a spring that is connected to the valve stem via a spring seat and valve seat spring lock or "retainer."

The valve seat spring lock failed due to fatigue cracking caused by cyclical side loading on the valve assembly. The cyclical side loading was caused by a valve yoke retaining nut that had fallen off, allowing the valve spring adjustment screw to back out of the equalizing yoke, causing the yoke to make contact with the valve spring seat. The actuating force was applied to the side of

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the valve spring seat, instead of the valve stem, resulting in side loading of the valve assembly. The cyclical side loading initiated a fatigue crack on the inside diameter of the valve seat spring lock leading to its failure.

The valve yoke retaining nut that had fallen off was discovered during performance of planned maintenance on March 21, 2000. This 2000 event caused the failure of the valve seat spring lock to occur. Corrective actions were taken to replace the valve yoke retaining nut that was found not attached, and to inspect the adequacy of the remaining valve yoke retaining nuts. However, an inspection of the exhaust valve assembly on the 2L cylinder head, which may have identified the degraded condition of the valve seat spring lock, was not completed.

In the most limiting failure mode, the valve seat spring lock could completely fail, allowing the valve to become disconnected from the valve spring. As a result, the valve could fall into the cylinder, potentially damaging the cylinder and causing the generation of debris. This debris could then travel to the turbocharger causing subsequent failure of the EDG.

In February 2007, a review of the engine signature analysis, performed after the completion of planned maintenance on EDG 1-2, showed an anomaly on an exhaust valve in cylinder 2L. At that time, it was believed to be a valve clearance issue, and no immediate corrective action was recommended. No performance issues were identified on the cylinder that would have required immediate action.

Between March 2000, when the valve yoke was discovered missing, and February 2007, EDG 1-2 had operated approximately 780 hours. This includes several performances of the 24-hour full load tests. Monthly surveillance tests performed after the February 2007 identification of an engine signature analysis anomaly in cylinder 2L were satisfactory (with respect to the operation of this cylinder) with no indication of a nonconforming condition. This indicates that, from a performance standpoint, the EDG was unaffected by the broken valve seat spring lock. Based on the above data, there is reasonable assurance that, the valve seat spring lock would not imminently fail in a manner that would have resulted in a loss of function of the 1-2 EDG in the short term, i.e., < 24 hours.

Since the rate of wear on the spring lock, spring seat, exhaust valve, and valve guide cannot be determined in a sufficient manner to assure that EDG 1-2 could operate for the required 30-day mission time, EDG 1-2 was determined to have been inoperable for the time period from January 21, 2008, to February 19, 2008. This 30-day period corresponds to the time from when the TS surveillance testing for EDG 1-2 was completed satisfactorily to when foreign material was discovered in the 2L cylinder head valve assembly area.

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ASSESSMENT OF SAFETY CONSEQUENCES

The event is considered to be of very low safety significance.

When considering the 30-day mission time for the EDG, if the limiting postulated scenario requiring the EDG safety function had occurred, EDG 1-2 would have been able to acceptably carry loads for the initial 24 hours from the onset of the occurrence. This time period provides ample time for implementing other recovery/mitigating strategies, including restoration of offsite power and/or restoration of the opposite train EDG (EDG 1 -1).

CORRECTIVE ACTIONS

The cylinder head on cylinder 2L was replaced.
 All remaining cylinder heads on the 1-2 EDG were inspected for evidence of any other cracked valve seat spring locks. No additional issues were identified.
 The valve seat spring locks on the 1-1 EDG will be inspected for cracking during the next scheduled preventive maintenance outage.

PREVIOUS SIMILAR EVENTS

Licensee Event Report 07-006, "Emergency Diesel Generator Inoperable in Excess of Technical Specification Requirements," dated August 24, 2007.