NMP44016

NRC Form 366 (9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Nine Mile Point Unit 2	0 5 0 0 0 410	1 OF 05

TITLE (4) Division I and II Emergency Diesel Generators Inoperable due to a Non-Safety Related Component Being Installed in a Safety Related Application - Assembly Deficiency

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
									N/A	0 5 0 0 0
11	23	88	88	— 065 ·	— 00	01	11	89	N/A	0 5 0 0 0

OPERATING MODE (9)	4
POWER LEVEL (10)	000

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check one or more of the following)* (11)

20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
20.405(a)(1)(i)	50.36(c)(1)	X 50.73(a)(2)(v)	73.71(c)
20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER *(Specify in Abstract below and in Text, NRC Form 366A)*
20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER	
	AREA CODE	
Keith Ward, Engineering Manager	315	349-4568

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	

SUPPLEMENTAL REPORT EXPECTED (14)

		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
X YES *(If yes, complete EXPECTED SUBMISSION DATE)*	NO		4	30	89

ABSTRACT *(Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines)* (16)

On November 23, 1988 at 1715 hours with the reactor mode switch in SHUTDOWN (Operational Condition 4), and with the reactor at 0% rated thermal power, Nine Mile Point Unit 2 (NMP2) discovered that a non-safety related component was improperly installed in a safety related application. Specifically, non-safety related post lube pilot valves had been installed in the safety related lube oil systems for the Divisions I and II Emergency Diesel Generator (EDG) turbochargers.

The root cause of this event is an assembly deficiency. The EDG vendor did not install the correct model valve as specified by design drawings and qualification documents.

The immediate corrective action for this event was for the NMP2 licensed operators to declare the Division I and II EDGs inoperable and entered into the applicable Technical Specifications (TS) action statement. Subsequently, the non-safety related valves were replaced with safety related valves per the original design documentation specifications. Additional corrective actions will be reported in a supplement to this LER, based upon the results of an ongoing 10CFR Part 21 evaluation by the Niagara Mohawk Licensing Department.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

I. DESCRIPTION OF EVENT

On November 23, 1988 at 1715 hours with the reactor mode switch in SHUTDOWN (Operational Condition 4), and with the reactor at 0% rated thermal power, Nine Mile Point Unit 2 (NMP2) discovered that a non-safety related component was improperly installed in a safety related application. Specifically, non-safety related post lube pilot valves had been installed in the safety related lube oil systems for the Division I and II Emergency Diesel Generator (EDG) turbochargers. The NMP2 licensed operators immediately declared the Division I and II EDGs inoperable and entered the applicable Technical Specification (TS) action statement. At the time of the event the reactor was at ambient pressure and the temperature was 115 degrees Fahrenheit.

The sequence of events for this incident is as follows:

On October 26, 1988 Problem Report (PR) No. 8191 was written to address a problem discovered while trying to replace a leaking turbocharger post lube pilot valve on the Division I EDG. The problem report described that the replacement valve had different sized air ports and that a tubing modification would be required to install the replacement valve. During the PR investigation, a review of the EDG design drawings and qualification documentation was performed to determine the correct part number for the valve. This review, along with subsequent conversations with the EDG supplier, determined that the part number of the installed valve was not the part number that had been specified in the design documentation. In addition, the installed valve was determined to be non-safety related when a safety related valve was required for this application. An inspection of the Division II EDG revealed the same problem.

On November 23, 1988 at 1715 hours, NMP2 Engineering notified NMP2 licensed operators of this discovery. At this time the NMP2 licensed operators declared the Division I and II EDGs inoperable and entered TS action statement 3.8.1.2, suspending core alterations, handling of irradiated fuel, and any operations with the potential of draining the reactor vessel.

The non-safety related post lube pilot valves were replaced with safety related post lube pilot valves per work requests. This work was completed on both EDGs (Division I and II) on November 30, 1988. The Division I EDG was declared operable on December 1, 1988, but the Division II EDG was not declared operable pending the completion of other work.

II. CAUSE OF EVENT

The root cause of this event is due to an assembly deficiency. The EDG manufacturer incorrectly installed a non-safety related post lube pilot valve in the safety related turbocharger lube oil system. The incorrect part was installed even though the design drawings and the qualification documentation had listed the correct part.

III. ANALYSIS OF EVENT

This event is considered reportable via 10CFR50.73(a)(2)(v) because this event could have prevented fulfillment of the EDG safety function by rendering two independent EDG trains inoperable.

A worst case scenario for the plant based on a common mode failure of these non-Category 1E devices is as follows:

1. A Loss of Coolant Accident (LOCA) is assumed to occur with a simultaneous Loss of Offsite Power (LOOP).

2. A common mode failure of the non-safety related post lube pilot valve occurs in both EDG turbocharger systems, disabling both the Division I and Division II EDGs and preventing them from performing their intended safety functions. This would result in a loss of all service water since the power to the service water pumps would be lost.

3. The Division III diesel would also be inoperable from the loss of its cooling water heat sink supplied by service water.

This scenario would place the plant in the unanalyzed condition of having no EDG's operable and subsequently, no service water system cooling available during a LOCA and a LOOP (assuming a single failure criteria). This scenario is essentially a station blackout with a Loss of Coolant Accident (LOCA).

The probability of these events occurring simultaneously, however, is remote. A common mode failure of one of these non-Category 1E components for both EDGs simultaneously is highly unlikely.

Since a failure of the post lube pilot valves never occurred, the safety function of the Emergency Diesel Generators was never compromised. It can be concluded then, that this event did not at any time impact plant or public health and safety.

The duration of the assembly deficiency, from the time the EDGs were manufactured in 1977, to the day the assembly deficiency was discovered in November 1988, was approximately eleven years. However, the reportable duration of this event, from the date of issuance of NMP2's operating license on October 31, 1986 to the date the work requests corrected the manufacturing deficiency on November 30, 1988 was approximately seven hundred and sixty one days.

IV. CORRECTIVE ACTIONS

The immediate corrective action was for the NMP2 licensed operators to declare the Division I and II EDGs inoperable and to enter TS action statement 3.8.1.2. TS action statement 3.8.1.2 suspends all core alterations, the handling of irradiated fuel in the secondary containment, and any operations which have a potential to drain the reactor vessel.

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In addition, the non-safety related post lube pilot valves were replaced with safety related post lube pilot valves per Work Request Nos. 146282 and 146283. This work was completed on November 30, 1988.

Additional corrective actions may be initiated based upon the results of an ongoing 10CFR Part 21 investigation by the Niagara Mohawk Licensing Department. These additional corrective actions will be addressed in a supplement to this LER which is to be submitted by April 30, 1989.

V. ADDITIONAL INFORMATION

RELATED EVENTS

LER 88-25 and 87-70 concern manufacturing deficiencies involving a solenoid valve spring assembly and an airlock door operating mechanism, respectively. These incidents are not considered similar to LER 88-65 since the components, the applications, and the manufacturers are not similar.

There have been three other LERs concerning EDG inoperability, LERs 88-44, 88-36, and 86-22. These LERs involved improper isolation of Category 1E and non-Category 1E components, an inoperable EDG cooling water valve, and inadvertent draining of the EDG day fuel tanks. None of these LERs are similar to LER 88-65, however, since the failure modes and the root causes are not similar.

A review of the NMP2 LER file has determined that there has only been one previous condition discovered at NMP2 where a non-safety related component was installed by the manufacturer in a safety related application. This incident involved non-Category 1E Agastat 7000 series relays being installed in place of Category 1E Agastat E7000 relays in the Service Water Motor Control Centers. As corrective actions, the non-safety related relays were replaced with Category 1E relays and all Motor Control Centers supplied by the same vendor were inspected for additional relay misapplications. No other misapplications were found. This incident is reported in LER 88-52.

RELATED DOCUMENTS

An initial 10CFR Part 21 Notification was made by Niagara Mohawk Power Corporation to the Nuclear Regulatory Commission on November 21, 1988 concerning this event. A supplemental 10 CFR Part 21 notification will be submitted at a future date upon completion of the ongoing investigation.

Failed Components: None

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Identification of Components Referred to in this LER

Component	IEEE 803 EIIS Funct	IEEE 805 System ID
Valve, Post Lube Pilot	V	EK
Reactor Vessel	RPV	N/A
Emergency Diesel Generator	DG	EK
Service Water System	NA	BI
Pump	P	BI