LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Indian Point Unit 3	05000286	1 OF 5

TITLE (4)
Missed Preventive Maintenance on Emergency Diesel Generator Due To Personnel Error

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 NAME	DOCKET NUMBER
05	10	93	93	-- 019 --	00	06	08	93		05000
									FACILITY NAME	DOCKET NUMBER 05000

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

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

20.402(b)		20.405(c)		50.73(a)(2)(iv)	73.71(b)
20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)	73.71(c)
20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)	OTHER
20.405(a)(1)(iii)	✓	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)	(Specify in Abstract below and in Text, NRC Form 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 (Include Area Code)
Bernadette Wiggin, Maintenance Engineer	(914) 736-8636

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS
				N						

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

ABSTRACT

On May 10 1993, with the plant in the cold shutdown condition, maintenance personnel determined that the preventive maintenance(PM) on 33 Emergency Diesel Generator (EDG) had not been performed in accordance with the vendor recommended frequency. As a result the recommended 12 year maintenance inspection had not been performed when it was due on December 12, 1987. This is a violation of Technical Specification 4.6.A.4. The cause of the event is personnel error in judgement that resulted in misinterpretation of GE-ALCO (vendor) instructions for standby engine maintenance. Corrective actions include training of maintenance engineering and management personnel, a complete review of the vendor recommended maintenance/surveillance/testing matrix and concurrence by the vendor that this matrix is acceptable for maintaining the ALCO Diesels for standby service. The 12 year PM inspection will be performed as will a review of the vendor manuals for safety related plant systems to assure that all safety related components are being maintained in accordance with vendor recommendations.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Indian Point Unit 3	05000286	93	--019--	00	2 OF 5

DESCRIPTION OF EVENTS

On May 10, 1993, at 2030 hours, while the plant was at cold shutdown with reactor coolant temperature and pressure at 112 °F and 0 psig respectively, 33 Emergency Diesel Generator (EDG)(EK)(DG) was declared inoperable because maintenance personnel discovered that the recommended 12 year preventive maintenance (PM) inspection had not been performed when it was due on December 12, 1987. This is a violation of Technical Specification 4.6.A.4. Technical Specification 4.6.A.4 states that, "Each diesel generator shall be inspected and maintained following the manufacturer's recommendations for this class of stand-by service." The vendor manual states that "After the warranty period, the adjustment of the suggested maintenance intervals to fit prevailing operating conditions is the responsibility of the user." The warranty period for Indian Point 3's emergency diesels was one year.

The 12 year interval for vendor recommended maintenance of this GE Locomotives Canada-ALCO 251 engine began on December 12, 1975, the day Indian Point 3's Technical Specifications became effective. Therefore, the 12 year PM inspection on 33 EDG became due on December 12, 1987.

In Inspection Report No. 50-286/88-21, the NRC cited the Authority for a violation of Technical Specification 4.6.A.4, specifically because, Indian Point 3 procedures did not address the long term diesel engine maintenance recommendations. As a result, the Authority agreed to implement a two phase program for emergency diesel generator maintenance. Phase I was to incorporate a revised standby preventive maintenance program. ALCO was retained to provide enhancements to the existing program. Phase II would revise procedures necessary to address the requirements of the new program. After reviewing the new ALCO engine maintenance program, IP3 management decided to revise the ALCO suggested 12 year inspection frequency to 14 years, and to perform this inspection during refueling outages, one diesel each refueling outage, starting with 31 EDG during the cycle 7/8 refueling outage. These decisions were based on engineering judgment and the interpretation of a statement in the ALCO manual which says, "The maintenance intervals (engine hours and times) are suggestions based on ALCO's experience. They are not to be interpreted as an implied warranty of service life. They can be expected to vary depending on the level of maintenance, load duty cycle, environmental conditions, engine rating and climatic and operating conditions imposed by the user." This statement in conjunction with verbal communications with the vendor of our intent and their seeming agreement and the fact that:

- the run hours on Indian Point 3's emergency diesels are slightly less than the minimum ALCO expectations
- quarterly, semi-annual and annual maintenance is performed on each of the emergency diesels.
- a comprehensive testing program exists at IP3 which covers both operations and performance indicators of the engines on a monthly basis.
- System Operating Procedures (SOP) which direct operators to review readings for essential equipment and give allowable tolerances for all equipment.
- operational history which was cited as "exceptional" with only three start failures in 1151 starts (as of September 1989).

On May 20, 1993, the vendor (GE-ALCO) was contacted for an interpretation of the statement in the vendor manual which says that the adjustment of the suggested maintenance intervals to fit prevailing operating conditions is the responsibility of the user. The vendor responded that the statement was included in the vendor manual only to protect the vendor from any liability concerns.

CAUSE OF THE EVENT

The cause of this event was personnel error in judgement that resulted in misinterpretation of GE-ALCO's instructions for standby engine maintenance. The decisions to defer the PM inspections were narrowly focused on the technical merits, which are sound, without a correspondingly sound analysis of the regulatory compliance implications.

CORRECTIVE ACTIONS

The following corrective actions will be performed in order to prevent recurrence of this event:

1. Prior to startup, maintenance engineers and managers who are responsible for performing evaluations that affect safety will be trained on 10 CFR 50.59 and 10 CFR 50.92 requirements that govern changes to FSAR and technical specifications.

2. A complete review of the ALCO Engine Maintenance Schedule (Diesel Matrix) has been performed to verify that all maintenance/testing/surveillance activities required by the vendor are included in a station procedure and that maintenance, surveillance and testing is being performed within the manufacturer's recommended interval. Any discrepancies will be resolved with the vendor by August 1, 1993.

3. The PMs on all three EDGs, including the 12 year preventive maintenance inspection on 33 EDG, will be current and in compliance with the vendor recommendations prior to start-up from the present Performance Improvement Program Outage.

ANALYSIS OF THE EVENT

This event is reportable under 10 CFR 50.73(a)(2)(i)(B). The licensee shall report any operation or condition prohibited by the plant's technical specifications. Technical specification section 4.6.A.4 states that "Each diesel generator shall be inspected and maintained following the manufacturer's recommendations for this class of stand-by service." The 33 EDG 12 year vendor recommended preventive maintenance was not performed as required on December 12, 1987. A similar event, a missed preventive maintenance on fan cooler units, was reported in LER-93-11-00.

SAFETY SIGNIFICANCE

This event did not effect the health and safety of the public. The EDGs are installed to provide backup power to essential equipment required to mitigate the consequences of design basis events and maintain the plant in a shut down condition. Any two of the three available diesels are capable of providing this function. Throughout the period in question two diesels were generally available to perform these safety functions. Monthly, quarterly, semiannual and annual PMs and tests demonstrated the operability of all three diesels.

In order to determine the extent of this condition, in addition to the review of the EDG PMs, an evaluation was performed by the Nuclear System Analysis Group to determine the five systems which have the most effect on core damage frequency for IP3. These five systems, auxiliary feedwater, power operated relief valve/safety injection, residual heat removal, service water and 480 volt distribution, will have a reliability centered maintenance program (RCM) developed for them prior to startup. RCM will provide a systematic method to determine the scope of components' preventive maintenance within these systems through the evaluation of the components' function, vendor recommendations, and plant and industry experience.