

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MWB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Limerick Generating Station, Unit 1	05000 352	96	-- 022 --	00	2 OF 4

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

Unit Conditions Prior to the Event

Unit 1 was in Operational Condition (OPCON) 1 (Power Operation) operating at 100% when this event was discovered. On November 2, 1996, the D14 Emergency Diesel Generator (EDG, EIIS:EK) was inoperable for scheduled maintenance and a twenty-four (24) hour endurance run was completed. The D14 EDG was declared operable on November 2, 1996, following successful completion of the scheduled post maintenance testing. There were no other systems, components, or structures out of service that contributed to this event.

Description of the Event

On December 31, 1996, at approximately 1500 hours, a non-licensed Equipment Operator (EO) discovered that the D14 EDG fuel oil storage tank (EIIS:DC) did not contain the minimum amount of fuel oil. The fuel oil level was obtained by the EO using an approved procedure. The procedure specified the use of a weighted measuring tape that is lowered into the top of the tank. This reading was taken immediately following performance of a monthly Surveillance Test of the D14 EDG. The EO contacted another EO who verified the tank level reading. The licensed Shift Supervisor was immediately notified at 1510 hours and the Technical Specifications (TS) actions for an inoperable EDG were then implemented. These actions included verification that the other EDG fuel oil storage tanks (Unit 1 and Unit 2) contained more than the minimum amount of fuel oil. The D14 fuel oil storage tank level was raised to above the minimum level during a fuel oil delivery, and the D14 EDG was declared operable on January 1, 1997, at 1259 hours.

The event investigation revealed that the fuel oil level had been below the TS minimum level since November 2, 1996, when an incorrect tank level reading was obtained. Since the operators were not aware of the low oil level, the actions of TS Section 3.8.1.1 for an inoperable EDG were not taken. This resulted in operation prohibited by TS. This report is submitted in accordance with the requirements of 10CFR50.73(a)(2)(i)(B).

Analysis of the Event

The actual consequences for this condition are minimal. The minimum fuel oil level (i.e., 33,500 gallons) is based on providing an onsite supply of fuel oil to support seven (7) days of continuous operation of the associated EDG. The actual amount of fuel oil in the storage tank on December 31, 1996, (i.e., 32,264 gallons) amounted to 96.3% of

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the required minimum amount of fuel oil. This amount of oil was sufficient to support over 6 days of continuous operation of the D14 EDG. Additionally, there was sufficient excess fuel oil onsite in the other three (3) Unit 1 storage tanks that could have been transferred to the D14 storage tank using permanent piping connections if additional fuel oil could not be immediately delivered. The low oil level did not impact any other aspect of the operability of the D14 EDG.

Cause of the Event

The cause of this event was that a challenging method for determining the tank oil level resulted in the EO obtaining an incorrect tank level reading. This method becomes more unreliable under adverse conditions (e.g., poor weather, low light conditions).

Following an oil delivery and completion of the D14 EDG twenty-four (24) hour endurance run on November 2, 1996, the EO obtained an oil level reading of ten feet six inches (i.e., 36,966 gallons). Based on the amount of oil delivered and the oil consumption rate of the D14 EDG, the actual oil level was approximately nine feet four inches (i.e., 33,176 gallons) which would have been below the TS minimum level. Later on November 26, 1996, and December 31, 1996, a total of four (4) other incorrect tank level readings were obtained by different EOs. Poor weather or night time lighting conditions existed when two of the readings were taken.

Contributing factors to the incorrect readings included:

- the EOs readings were influenced by an expected oil level based on the last measured tank level readings that are recorded in the EO office.
- the D14 EDG fuel oil tank level alarm and local level indicator were not functioning properly due to inadequate instrument design and maintenance. Had the instrument been functioning properly, the alarm would have alerted personnel to a possible tank low level condition. This condition would have prompted personnel to confirm the tank level by obtaining an actual tank level reading. The level instrumentation is not safety related and is not relied upon to satisfy T.S. requirements. Tank level measurements are obtained manually due to inaccessibility of the local indicator, design concerns, and reliability concerns.

All of the operators were interviewed and it was determined that these readings did not involve any willful intent to falsify records.

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Corrective Actions

The EOs involved in the operation of the EDGs were informed of the potential for obtaining an incorrect tank level reading and that increased attention should be applied when obtaining the tank level reading. The operations personnel were also reminded to be aware of the potential for being influenced by prior knowledge when taking readings. The appropriate procedures were revised to require an independent tank level reading following operation of the EDGs until a more reliable tank level reading method is implemented.

An improved method for determining the tank level is currently under development and is expected to be implemented by February 3, 1997. An additional engineering review is being performed to determine the best long term method for measuring tank level. This review is expected to be completed by July 1, 1997.

The D14 EDG fuel oil storage tank level indicator was repaired and the other seven (7) EDG storage tank level indicators were inspected. The instruments were found to be functioning properly but were degraded. These instruments have malfunctioned in the past. Actions to improve the reliability of this instrumentation are being pursued. Until the reliability of the level instruments is addressed, additional preventive maintenance activities have been scheduled to ensure the instruments remain functional and manual tank readings will continue to be used.

Previous Similar Occurrences

None