

NON-PUBLIC?: N
ACCESSION #: 8707210743
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Three Mile Island Unit 2 PAGE: 1 of 3

DOCKET NUMBER: 05000320

TITLE: Inoperability of Emergency Diesel Generator DF-X-1B
EVENT DATE: 12/20/85 LER #: 86-001-01 REPORT DATE: 07/14/87

OPERATING MODE: N POWER LEVEL: 000

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR
SECTION
50.73(a)(2)(i)

LICENSEE CONTACT FOR THIS LER:
NAME: Christopher J. Dell, Technical Analyst II
TELEPHONE #: 717-948-8428

COMPONENT FAILURE DESCRIPTION:
CAUSE: X SYSTEM: EK COMPONENT: 65 MANUFACTURER: W209
REPORTABLE TO NPRDS: N
CAUSE: X SYSTEM: EK COMPONENT: SOL MANUFACTURER: W209
REPORTABLE TO NPRDS: N

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT: At 2050 hours on December 13, 1985, the annual preventive maintenance for Emergency Diesel Generator DF-X-1B commenced. On December 20, 1985, while performing the required demonstration of engine operability, it was determined that there was no remote speed control. Troubleshooting eventually identified the governor as being defective. A replacement governor was obtained and installed. Retesting indicated that the remote speed control problem was corrected, but there was no shutdown capability. Further troubleshooting discovered a defective solenoid in the replacement governor. A new solenoid was obtained and installed. Engine operability was successfully demonstrated and the engine was returned to service at 1709 hours on December 21, 1985. Thus, Emergency Diesel Generator DF-X-1B was out-of-service for more than seven (7) days, exceeding the timeclock of the Action Statement of Technical Specification 3.8.1.1. The event is reportable pursuant to 10 CFR 50.73(a)(2)(i)(B). The governor and solenoid were returned to the manufacturer for analysis. The governor was leaking oil internally as a result of a defective pilot valve bushing and pilot valve plunger. The subsequent shutdown solenoid failure was attributable to loose fittings on

the shutdown assembly which resulted in the shutdown assembly being unable to control the governor. Based on the analysis results, no long-term corrective actions are considered necessary.

(End of Abstract)

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I. PLANT OPERATING CONDITIONS BEFORE THE EVENT

The TMI-2 facility was in a long-term cold shutdown state; the defueling evolution was in progress. The reactor decay heat was being removed via loss to ambient. Throughout this event there was no affect on the Reactor Coolant System or the core.

II. STATUS OF STRUCTURES, COMPONENTS, OR SYSTEMS THAT WERE INOPERABLE AT THE START OF THE EVENT AND THAT CONTRIBUTED TO THE EVENT

At the time of the event, Emergency Diesel Generator DF-X-1B (IEEE Code-EK) was out-of-service due to the performance of the annual preventive maintenance.

III. EVENT DESCRIPTION

At 2050 hours on December 13, 1985, the annual preventive maintenance of TMI-2 Emergency Diesel Generator, DF-X-1B, commenced in accordance with TMI-2 Preventive Maintenance Procedure 4220-PMR-3860.01, "Diesel Generator Inspection." On December 20, 1985, while performing the required demonstration of engine operability at the completion of the preventive maintenance, it was determined that there was no remote speed control, i.e., the speed of the diesel generator could not be regulated by the Control Room. Troubleshooting eventually identified the governor (IEEE Code-65) as being defective. A replacement governor was obtained and installed. Retesting indicated that the remote speed control problem was corrected, but there was no shutdown capability. Further troubleshooting discovered a defective solenoid (IEEE Code-SOL) in the replacement governor. A new solenoid was obtained and installed. Engine operability was successfully demonstrated and the engine was returned to service at 1709 hours on December 21, 1985.

Due to the timing of the governor and solenoid failure, i.e., at the completion of the annual preventive maintenance, Emergency Diesel Generator DF-X-1B could not be restored to service within the seven (7) day timeframe permissible under the Action Statement of

Technical Specification 3.8.1.1. The Action Statement was exceeded by twenty (20) hours and nineteen (19) minutes. Therefore, this event is reportable pursuant to 10 CFR 50.73(a)(2)(i)(B).

IV. ROOT CAUSE OF THE EVENT

The governor and solenoid were returned to the manufacturer for analysis. The governor was leaking oil internally as a result of a defective pilot valve bushing and pilot valve plunger. The subsequent shutdown solenoid

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failure was attributable to loose fittings on the shutdown assembly which resulted in the shutdown assembly being unable to control the governor.

V. CORRECTIVE ACTIONS

Short-Term - The failed governor and subsequent defective solenoid were replaced. Engine operability was successfully demonstrated and the diesel was returned to service at 1709 hours on December 21, 1985.

Long-Term - Based on the manufacturers analysis, no long-term corrective actions are considered necessary.

VI. COMPONENT FAILURE DATA

Part Type Part Designator Manufacturer

Governor D-82240-089 Woodward

Solenoid 5407-049 Woodward

VII. AUTOMATIC OR MANUALLY INITIATED SAFETY SYSTEM RESPONSES

N/A

VIII. ASSESSMENT OF THE SAFETY CONSEQUENCES AND IMPLICATIONS OF THE EVENT

During the period the Emergency Diesel Generator, DF-X-1B, was inoperable, Emergency Diesel Generator, DF-X-1A, was in service. The operability of DF-XC-1A was demonstrated by performing the surveillance requirements of Recovery Operations Plan Sec

ion

4.8.1.1.1 and 4.8.1.1.2.a.4 in accordance with the Technical Specification Testing Frequency Matrix of Table 3.8-1. During the period DF-X-1B was inoperable, off-site AC power was available and DF-X-1A could have performed the same function as DF-X-1B. No events requiring use of the Emergency Diesel Generators occurred during this period: therefore, this event had no effect on the health and safety of the public.

ATTACHMENT # 1 TO ANO # 8707210743 PAGE: 1 of 1

Nuclear GPU Nuclear Corporation
Post Office Box 480
Route 441 South
Middletown, Pennsylvania 17057-0191
717 944-7621
TELEX 84-2386
Writer's Direct Dial Number:

(717) 948-8461

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July 14, 1987

US Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Dear Sirs:

Three Mile Island Nuclear Station, Unit 2 (TMI-2)
Operating License No. DPR-73
Docket No. 50-320
Licensee Event Report 86-01, Revision 1

Attached is Revision 1 to Licensee Event Report 86-01 concerning the inoperability of Emergency Diesel Generator DF-X-1B on December 20, 1985. This revision reports the results of the failure analysis performed by the vendor.

Sincerely,

/s/ ILLEGIBLE
F. R. Standerfer

Director, TMI-2

FRS/CJD/eml

Attachment

cc: Regional Administrator, Region 1 - W. T. Russell
Director, TMI-2 Cleanup Project Directorate - Dr. W. D. Travers

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