

AEC DISTRIBUTION FOR PART 50 DOCKET MATERIAL
(TEMPORARY FORM)

CONTROL NO: 6548

FILE: _____

FROM: Metropolitan Edison Company Reading, Pa. 19603 Mr. R.C. Arnold		DATE OF DOC 7-16-74	DATE REC'D 7-18-74	LTR X	TRX	RPT	OTHER
TO: AEC		ORIG 1 signed	CC	OTHER	SENT AEC PDR XXX SENT LOCAL PDR XXX		
CLASS	UNCLASS XXX	PROP INFO	INPUT	NO CYS REC'D 1	DOCKET NO: 50-289		

DESCRIPTION:
Ltr reporting an abnormal occurrence No. AO-50-289/74-13...concerning Trip of the 1B Emergency Diesel Generator Prior to reaching rated speed and Power....

ENCLOSURES:
ACKNOWLEDGED
DO NOT REMOVE

PLANT NAME: Three Mile Island

FOR ACTION/INFORMATION 7-18-74 JB

- | | | | |
|----------------------|-------------------------|--------------------------|---------------------------|
| BUTLER (L)
W/ CYS | SCHWENCER (L)
W/ CYS | ZIEMANN (L)
W/ CYS | REGAN (E)
W/ CYS |
| CLARK (L)
W/ CYS | STOLZ (L)
W/ CYS | DICKER (E)
W/ CYS | Lear
W/ CYS |
| DADD (L)
W/ CYS | VASSALLO (L)
W/ CYS | KNIGHTON (E)
W/ CYS | W/ CYS |
| KNIEL (L)
W/ CYS | PURPLE (L)
W/ CYS | YOUNGBLOOD (E)
W/ CYS | W/ CYS |

INTERNAL DISTRIBUTION

- | | | | | |
|--|---|---------------|---|---|
| <input checked="" type="checkbox"/> REG FILE | <input checked="" type="checkbox"/> TECH REVIEW | DENTON | <input checked="" type="checkbox"/> LIC ASST | A/T IND |
| <input checked="" type="checkbox"/> AEC PDR | <input checked="" type="checkbox"/> HENDRIE | GRIMES | DIGGS (L) | BRAITMAN |
| <input checked="" type="checkbox"/> OGC | <input checked="" type="checkbox"/> SCHROEDER | GAMMILL | GEARIN (L) | SALTZMAN |
| <input checked="" type="checkbox"/> MUNTZING/STAFF | <input checked="" type="checkbox"/> MACCARY | KASTNER | GOULBOURNE (L) | B. HURT |
| <input checked="" type="checkbox"/> CASE | <input checked="" type="checkbox"/> KNIGHT | BALLARD | KREUTZER (E) | |
| GIAMBUSSO | <input checked="" type="checkbox"/> PAWLICKI | SPANGLER | LEE (L) | PLANS |
| BOYD | <input checked="" type="checkbox"/> SHAO | | MAIGRET (L) | MCDONALD |
| MOORE (L)(LWR-2) | <input checked="" type="checkbox"/> STELLO | ENVIRO | REED (E) | CHAPMAN |
| DEYOUNG (L)(LWR-1) | <input checked="" type="checkbox"/> HOUSTON | MULLER | SERVICE (L) | DUBE w/input |
| SKOVHOLT (L) | <input checked="" type="checkbox"/> NOVAK | DICKER | SHEPPARD (L) | E. COUPE |
| <input checked="" type="checkbox"/> GOLLER (L) | <input checked="" type="checkbox"/> ROSS | KNIGHTON | SLATER (E) | |
| P. COLLINS | <input checked="" type="checkbox"/> IPPOLITO | YOUNGBLOOD | SMITH (L) | <input checked="" type="checkbox"/> D. THOMPSON (2) |
| DENISE | <input checked="" type="checkbox"/> TEDESCO | REGAN | <input checked="" type="checkbox"/> TEETS (L) | <input checked="" type="checkbox"/> KLECKER |
| <input checked="" type="checkbox"/> G OPR | <input checked="" type="checkbox"/> LONG | PROJECT MGR | WILLIAMS (E) | <input checked="" type="checkbox"/> EISENHUT |
| W. & REGION (3) | <input checked="" type="checkbox"/> LAINAS | | WILSON (L) | |
| "S" | <input checked="" type="checkbox"/> BENAROYA | HARLESS | | |
| | <input checked="" type="checkbox"/> VOLLMER | | | |

EXTERNAL DISTRIBUTION

- | | | |
|--|---|---|
| PDR Harrisburg, Pa.
ABERNATHY
WCHANAN) | (1)(2)(10)-NATIONAL LABS
1-ASLBP(E/W Bldg, Rm 529)
1-W. PENNINGTON, Rm E-201 GT
1-B&M SWINEBROAD, Rm E-201 GT
1-CONSULTANTS
NEWMARK/BLUME/AGBABIAN | 1-PDR-SAN/LA/WY
1-BROOKHAVEN NAT LAB
1-G. ULRICKSON, ORNL
1-AGMED (RUTH GUSMAN)
Rm B-127 GT
1-RD. MUELLER, Ltr F-100
GT |
|--|---|---|

LIC ASST Teets
7-18-74

7910250 763

S



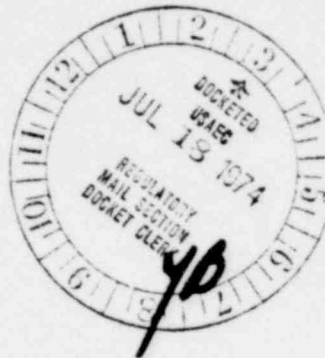
METROPOLITAN EDISON COMPANY

POST OFFICE BOX 542 READING, PENNSYLVANIA 19603

TELEPHONE 215 - 929-3601

JUL 16 1974

GOL 0171



Director
Directorate of Licensing
U. S. Atomic Energy Commission
Washington, D. C. 20545

Dear Sir:

Operating License DPR-50
Docket No. 50-289

In accordance with the Technical Specifications for Three Mile Island Nuclear Station, Unit 1, we are reporting the following abnormal occurrence:

- (1) Report Number: AO 50-289/74-13
- (2a) Report Date: July 16, 1974
- (2b) Occurrence Date: July 6, 1974
- (3) Facility: Three Mile Island Nuclear Generating Station, Unit 1
- (4) Identification of Occurrence:

Title: Trip of the 1B Emergency Diesel Generator prior to reaching rated speed and power.

Type: An abnormal occurrence as defined by the Technical Specifications, paragraph 1.8d, in that the tripping of the 1B Emergency Diesel Generator threatened to cause an Engineered Safeguard feature or system to be incapable of performing its intended function.

- (5) Conditions Prior to Occurrence:

Power escalation test with the reactor at 40% of rated power and major plant parameters as follows:

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Power: Core: 1014 MWT
Elec: 319 MWE

RC Flow: 136×10^6 lbs./hr.

RC Pressure: 2155 psig

RC Temp.: 579°F

PRZR Level: 220 in.

PRZR Temp.: 650°F

(6) Description of Occurrence:

During the performance of the quarterly Engineered Safeguards System (ESAS) Test, the 1B Emergency Diesel Generator tripped prior to reaching rated speed and voltage. A second attempt at initiating the ESAS Test resulted in a successful start of the generator in question. An immediate investigation was conducted to determine the cause of the trip.

The diesel generator is equipped with an oil pressure limit switch (OPLS) which senses engine speed as a function of oil pressure. The OPLS works in combination with a timer, which is set for about 10 seconds. When the diesel receives a start signal, the timer is energized. If the diesel does not start and come up to running speed within 10 seconds, the timer will "time out" and energize a "Shutdown Relay," which causes the engine to trip. In the present case the speed sensing OPLS failed to pick up in less than 10 seconds and the diesel engine tripped.

(7) Designation of Apparent Cause of Occurrence:

The investigation which followed the diesel trip revealed that the OPLS will not always pick up in less than 10 seconds, even though the engine is running. This same problem had been noted on both Emergency Diesel Generator OPLS's during preoperational testing, at which time an increase in the diameter and a reduction in the length of the sensing lines to the pressure switches had appeared to have solved the problem.

It has been concluded that the apparent cause of this occurrence is the design of the OPLS for reasons as follows:

- a) the 1B Emergency Diesel Generator OPLS settings and "Start Failure" timer setting were subsequently verified to be in accordance with the manufacturer's recommendations;
- b) the oil pressure sensing lines were checked for air binding and no binding was found; and

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- c) the above-referenced previous pressure sensing line design modification (to enable the OPLS to better function) failed.
- (8) Analysis of Occurrence: It is believed that the tripping of the 1B Emergency Diesel Generator did not represent a threat to the health and safety of the public for the following reasons:
- a) During an actual emergency requiring actuation of the ESAS, the 1B Emergency Diesel Generator would have started and provided the necessary emergency power in that the circuit which shutdown the diesel engine is bypassed in an actual ESAS situation.
 - b) Unit 1 is provided with several redundant sources of emergency electrical power. Consequently, the failure of a single source does not hinder the effective operation of the ESAS.
- (9) Corrective Action: Immediately following the occurrence, the redundant 1A Emergency Diesel Generator was successfully tested; and the 1B Emergency Diesel Generator was retested, and this time it did not trip. Also, the OPLS settings and the "Start Failure" timer settings for the affected 1B Emergency Diesel Generator were verified to be in accordance with the manufacturer's recommendations.

The Plant Operations Review Committee (PORC) met promptly after the occurrence and recommended to the Station Superintendent that:

- a) the design and application of the pressure switch be reviewed to determine if the switch should be replaced by a switch of a different design, and
- b) the possibility of a faulty OPLS be corrected by replacing the questionable OPLS with a new switch and by ensuring after its installation that
 - 1. the OPLS settings and start failure timers be checked to ensure they are in accordance with the manufacturer's latest recommendations,
 - 2. the oil pressure sensing line be checked for air binding, and
 - 3. a test be run to ensure that a sufficient margin exists between the OPLS actuation time and the "Start Failure" timer setting.

The Station Superintendent has concurred with PORC's recommendations; the Architect - Engineer is in the process of reviewing the design and application of the pressure switch; a new OPLS has been ordered; and step 9b above will be completed after receipt of the new OPLS.

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(10) Failure Data:

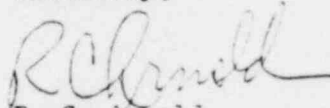
a) Record of Previous Failures:

None.

b) Equipment Identification:

Consolidated Controls Pressure Switch, 0-25 psi, Part No.
21A1BL 025B-B.

Sincerely,



R. C. Arnold
Vice President-Generation

RCA:JFV:sh

cc: Directorate of Regulatory Operations, Region 1
U. S. Atomic Energy Commission
631 Park Avenue
King of Prussia, Pennsylvania 19406

File 20.1.1
7.7.3.5.1

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