*A 04/17/n8*

REC: KEPPLER J G          ORG: SHALLER D V          DOCDATE: 04/07/78
  NRC                       IN & MI PWR             DATE RCVD: 04/14/78

DOCTYPE: LETTER    NOTARIZED: NO                    COPIES RECEIVED
SUBJECT:                                            LTR 1    ENCL 1
FORWARDING LICENSEE EVENT REPT (RO 50-315/78-001/031-1) ON 12/17/77
CONCERNING UNIT 2 C-D EMERGENCY DIESEL GENERATOR TRIPPED ON OVERSPEED DURING
DIESEL STARTS...W/ATT LER 78-009/03L-1 AND 78-023/03L-0.


PLANT NAME: COOK - UNIT 1                    REVIEWER INITIAL:  XJM
                                            DISTRIBUTOR INITIAL:

**************** DISTRIBUTION OF THIS MATERIAL IS AS FOLLOWS ****************

    INCIDENT REPORTS
    (DISTRIBUTION CODE A002)

    FOR ACTION:     BR CHIEF SCHWENCER**W/4 ENCL

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                    SHAO**W/ENCL                  VOLLMER/BUNCH**W/ENCL
                    KREGER/J. COLLINS**W/ENCL     ROSA**W/ENCL
                    K SEYFRIT/IE**W/ENCL


    EXTERNAL:       LPDR'S
                        ST. JOSEPH, MI**W/ENCL
                    TIC**W/ENCL
                    NSIC**W/ENCL
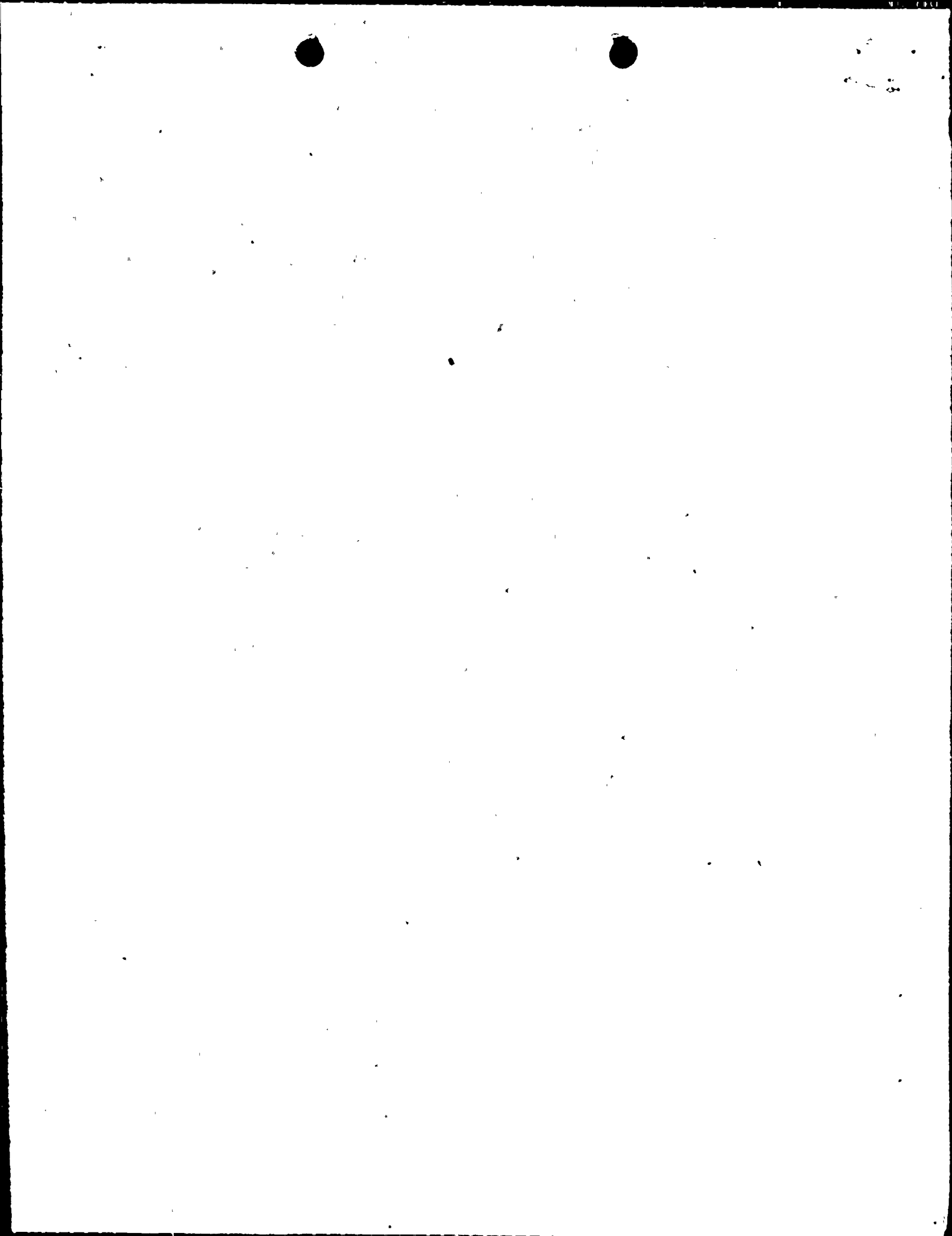                    ACRS  CAT B**W/16 ENCL


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                                            REGULATORY GUIDE 10.1


DISTRIBUTION:   LTR 45    ENCL 45            CONTROL NBR:   781030109
SIZE:  1P+1P+4P

****************************** THE END ******************************

**INDIANA & MICHIGAN POWER COMPANY**
DONALD C. COOK NUCLEAR PLANT
P.O. Box 458, Bridgman, Michigan 49106

American Electric Power System

April 7, 1978

Mr. J.G. Keppler, Regional Director
Office of Inspection and Enforcement
United States Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL  60137

Operating License DPR-58
Docket No. 50-315

Dear Mr. Keppler:

Pursuant to the requirements of the Appendix A Technical Specifications
the following reports are submitted:
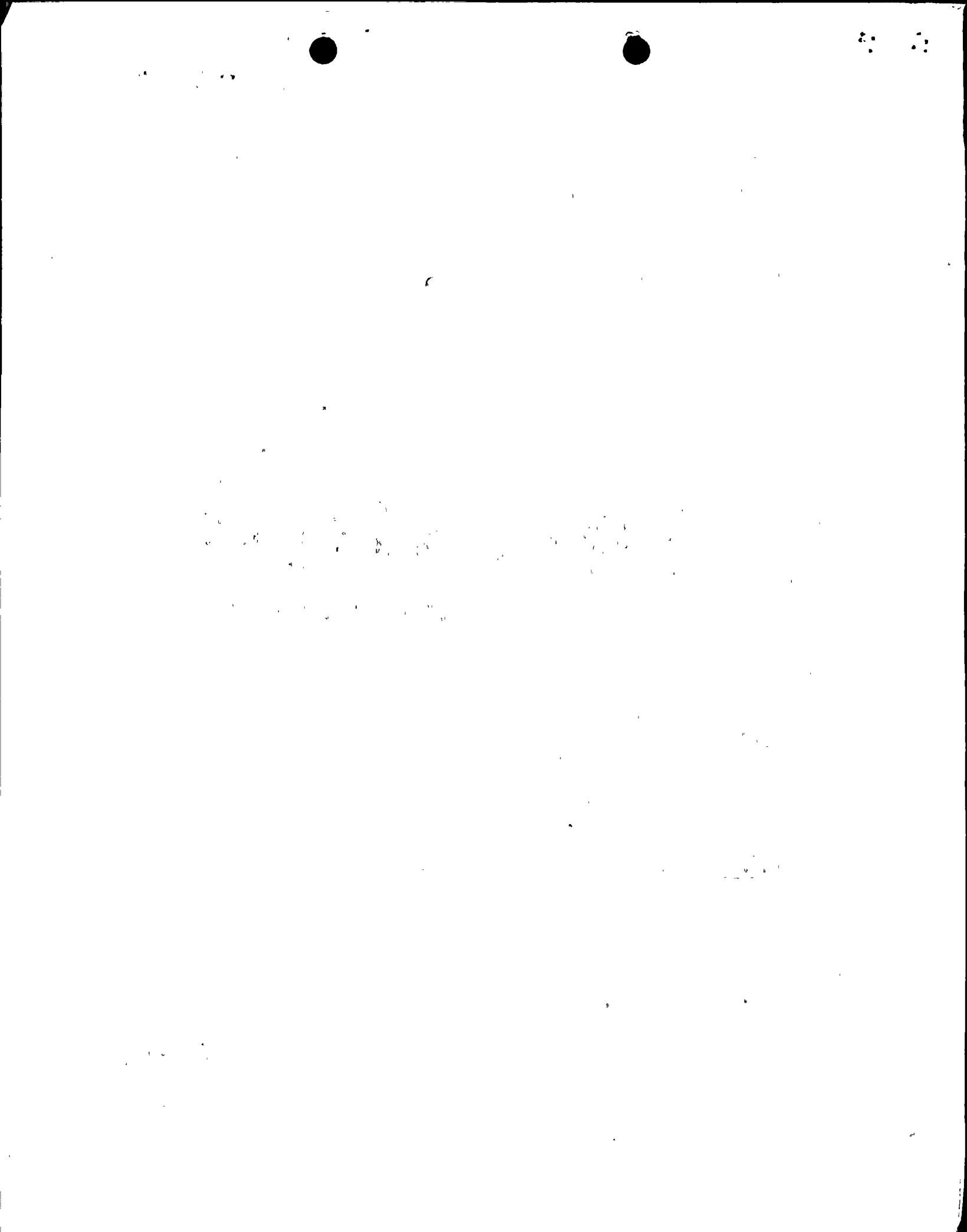
RO 78-001/03L-1
RO 78-009/03L-1
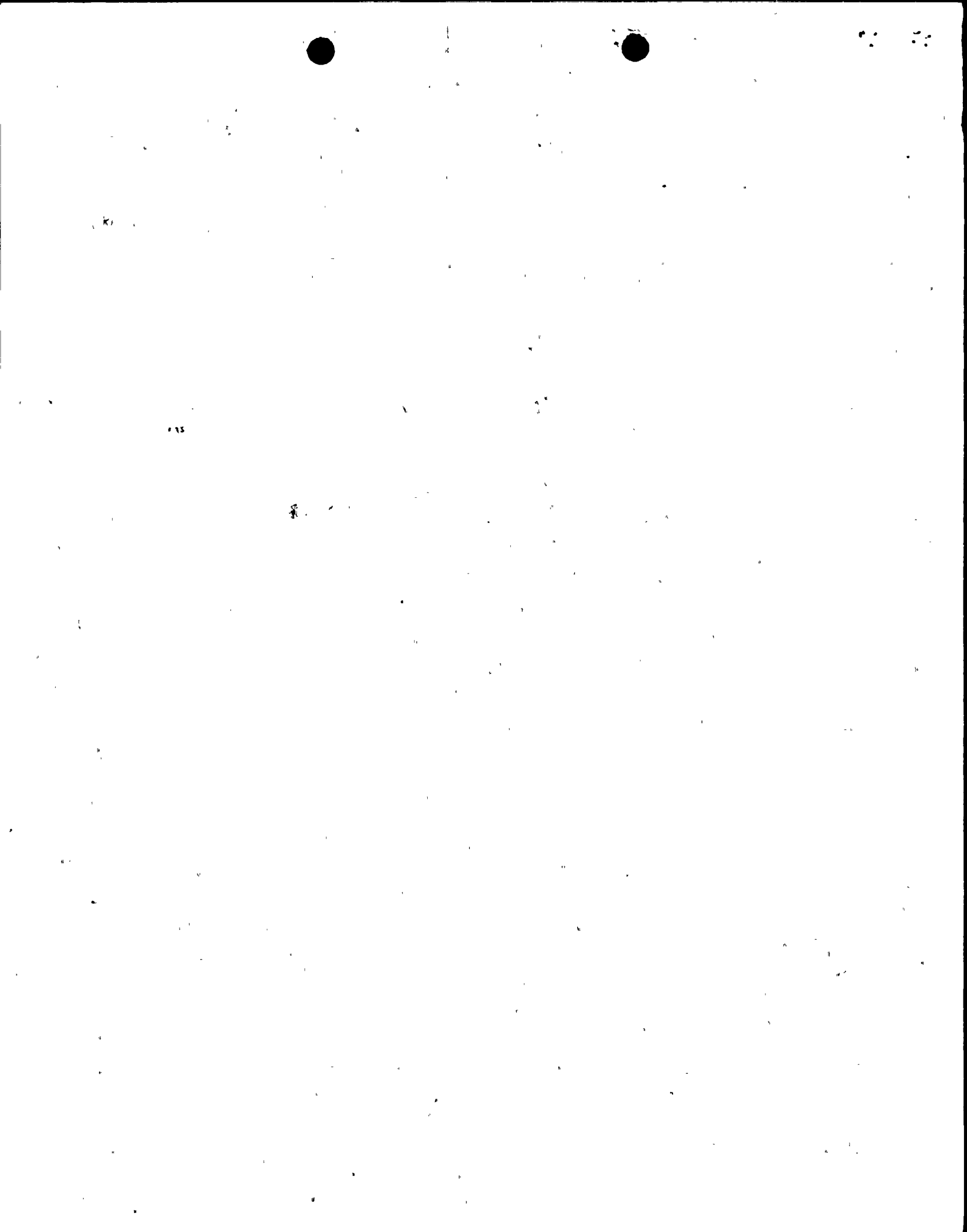RO 78-023/03L-0.

Sincerely,

D.V. Shaller
Plant Manager

/bab

cc:  J.E. Dolan
R.W. Jurgensen
R.F. Kroeger
R. Kilburn
R.J. Vollen BPI
K.R. Baker RO:III
R.C. Callen MPSC
P.W. Steketee, Esq.
R. Walsh, Esq.
G. Charnoff, Esq.
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PNSRC
J.F. Stietzel
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Dir., MIPC (3 copies)

APR 1 0 1978

CONTROL BLOCK: |__|__|__|__|__|__| (1)    (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

| 0 | 1 | M | I | D | C | C | 1 | (2) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (3) | 4 | 1 | 1 | 1 | 1 | (4) | | | (5) |

7  8  9  LICENSEE CODE 14  15  LICENSE NUMBER  25  26  LICENSE TYPE 30  57 CAT 58

CON'T

| 0 | 1 |  REPORT SOURCE  L (6) 0 | 5 | 0 | 0 | 0 | 3 | 1 | 5 | (7) 1 | 2 | 1 | 7 | 7 | 7 | (8) 0 | 4 | 0 | 7 | 7 | 8 | (9) |

60  61  DOCKET NUMBER  68  69  EVENT DATE  74  75  REPORT DATE  80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

| 0 | 2 | DURING UNIT 2 PREOPERATIONAL TESTING AND UNIT 1 OPERATION. ON THE DATES OF DEC.17, 1977,

| 0 | 3 | JAN.2,7,18,AND 21,1978,THE UNIT 2 C-D EMERGENCY DIESEL GENERATOR(POWER SUPPLY FOR THE

| 0 | 4 | MOTOR DRIVEN AUXILIARY FEED PUMP FOR UNIT 1,T.S. 3.7.1.2.a)TRIPPED ON OVERSPEED DURING

| 0 | 5 | DIESEL STARTS.IN ALL INSTANCES EXCEPT JAN.21,THE DIESEL WAS RESTARTED AND OPERABLE.ON

| 0 | 6 | JAN.21,THE DIESEL WAS DECLARED INOPERABLE AT 1510 HOURS AND DETERMINED TO BE OPERABLE

| 0 | 7 | AT 1907 HOURS ON JAN.22. THEREBY,MEETING THE 72 HOUR LIMIT IN  T.S. 3.7.1.2

| 0 | 8 |

7  8  9  80

| 0 | 9 |  SYSTEM CODE E | E (11)  CAUSE CODE B (12)  CAUSE SUBCODE A (13)  COMPONENT CODE E | N | G | I | N | E (14)  COMP. SUBCODE Z (15)  VALVE SUBCODE Z (16) |

7  8  9  10  11  12  13  18  19  20

(17) LER/RO REPORT NUMBER  EVENT YEAR 7 | 8  SEQUENTIAL REPORT NO. 0 | 0 | 1  / OCCURRENCE CODE 0 | 3  REPORT TYPE L  REVISION NO. 1

21  22  23  24  26  27  28  29  30  31  32

ACTION TAKEN F (18)  FUTURE ACTION Z (19)  EFFECT ON PLANT Z (20)  SHUTDOWN METHOD Z (21)  HOURS (22) 0 | 0 | 0 | 0  ATTACHMENT SUBMITTED Y (23)  NPRD-4 FORM SUB. Y (24)  PRIME COMP. SUPPLIER X (25)  COMPONENT MANUFACTURER D | 2 | 8 | 3 (26)

33  34  35  36  37  40  41  42  43  44  47

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

| 1 | 0 |

| 1 | 1 |

| 1 | 2 |

| 1 | 3 |

| 1 | 4 |

7  8  9  80

FACILITY STATUS E (28)  % POWER 1 | 0 | 0 (29)  OTHER STATUS NA (30)  METHOD OF DISCOVERY A (31)  DISCOVERY DESCRIPTION (32) UNIT 2 SAFETY INJECTION SIGNAL

| 1 | 5 |

7  8  9  10  12  13  44  45  46  80

ACTIVITY RELEASED Z (33)  CONTENT OF RELEASE Z (34)  AMOUNT OF ACTIVITY NA (35)  LOCATION OF RELEASE NA (36)

| 1 | 6 |

7  8  9  10  11  44  45  80

PERSONNEL EXPOSURES NUMBER 0 | 0 | 0 (37)  TYPE Z (38)  DESCRIPTION (39) NA

| 1 | 7 |

7  8  9  11  12  13  80

PERSONNEL INJURIES NUMBER 0 | 0 | 0 (40)  DESCRIPTION (41) NA

| 1 | 8 |

7  8  9  11  12  80

LOSS OF OR DAMAGE TO FACILITY (43) TYPE Z (42)  DESCRIPTION NA

| 1 | 9 |

7  8  9  10  80

PUBLICITY ISSUED N (44)  DESCRIPTION (45) NA

NRC USE ONLY

| 2 | 0 |

7  8  9  10  68  69  80

NAME OF PREPARER  Jack Rischling  PHONE: 616-465-5901

GPO 917-926

Other previous events include RO-050-0315/76-36;76-55 and 77-42. This RO
is a supplement/revision to RO-050-0315/78-01 and RO-050-0315/78-09.


## CAUSE

Investigation revealed that the cause of the Unit 2 CD engine overspeed trips
to be a spurious activation of the overspeed trip device,(Dynalco-Model RT-2339
Relay Tachometer),caused by switching noise on the 250 V DC power supply system.

A Design Change (RC-DC-02-1520) was implemented adding capacitors from the
power input terminals of RT-2339 to ground, which seemed to attenuate the
magnitude of the "glitch" causing the overspeed trips.

After this Design Change was installed and other repair work completed, testing
resumed on January 18 and another CD Diesel overspeed trip occured. Another
type of filter scheme was tried without much success. Futher investigation
revealed that the 250 V DC relay actually causing the trips was the "Upper
Valve Gear Lube Oil Failure Alarm Time Delay" (62-VGLQF).

Another design change (RFC-DC-12-1527) was written to replace the 24 V DC
supply with an AC input. The AC power source is preferred because of better
noise immunity. After this installation was completed on January 26, testing
resumed.

The magnitude of the glitch on the diesel tachometer was now approximately
20 RPM, this was a 50-100 RPM reduction from the glitches previously
observed. Testing resumed to pin point the ultimate source of the problem.
The noise being generated by the 250 V DC relay coils possessed frequency
components that were being capacitively coupled to and processed by the
signal level electronics of the RT 2339 module.

A modification to the RT 2339 module was added to Design Change 12-1527.
This consisted of replacing and re-routing the 100 V DC leads and the mag-
netic pickup leads inside the module with shielded twisted pair instrument
cable. The shielded leads replaced 24 gauge unshielded, untwisted stranded
wire.

After this installation was completed, testing resumed. Testing consisted of
12 diesel starts, 5 starts specifically for the Design Change test procedure.

Absolutely no meter deflections were observed and no diesel trips occured,
thus, the noise coming into the module on the 100 V DC relay leads was
eliminated.

By February 7, 1978 the shielding and power supply modifications were per-
formed and tested successfully on the Emergency Deisels for both Units.
It should be noted that there had never been an overspeed incident resulting
from a Blackout start signal or any other signal simulated as part of
Preoperational Testing.

**CONTROL BLOCK:** |_|_|_|_|_| (1)    (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

| 0 1 | | M | I | D | C | C | 1 | (2) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (3) | 4 | 1 | 1 | 1 | 1 | (4) | | | (5) |

7    8    9    LICENSEE CODE    14    15    LICENSE NUMBER    25    26    LICENSE TYPE    30    57 CAT 58

**CON'T**

| 0 1 | REPORT SOURCE | L | (6) | 0 | 5 | 0 | 0 | 0 | 3 | 1 | 5 | (7) | 0 | 1 | 1 | 8 | 7 | 8 | (8) | 0 | 4 | 0 | 7 | 7 | 8 | (9) |

7    8    60    61    DOCKET NUMBER    68    69    EVENT DATE    74    75    REPORT DATE    80

**EVENT DESCRIPTION AND PROBABLE CONSEQUENCES** (10)

| 0 2 | DURING UNIT 2 PREOPERATIONAL TESTING AND UNIT 1 OPERATION. ON THE DATES OF DEC.17, 1978 |

| 0 3 | JAN.2, 7, 18 AND 21, 1978, THE UNIT 2 C-D EMERGENCY DIESEL GENERATOR (POWER SUPPLY FOR THE |

| 0 4 | MOTOR DRIVEN AUXILIARY FEED PUMP FOR UNIT 1, T.S. 3.7.1.2a) TRIPPED ON OVERSPEED DURING |

| 0 5 | DIESEL STARTS.   IN ALL INSTANCES EXCEPT JAN.21, THE DIESEL WAS RESTARTED AND OPERABLE. |

| 0 6 | ON JAN.21, THE DIESEL WAS DECLARED INOPERABLE AT 1510 HOURS AND DETERMINED TO BE |

| 0 7 | OPERABLE AT 1907 HOURS ON JAN.22   THEREBY, MEETING THE 72 HOUR LIMIT IN T.S.3.7.1.2. |

| 0 8 | |

7    8    9    80

| 0 9 | SYSTEM CODE: E E (11)   CAUSE CODE: B (12)   CAUSE SUBCODE: A (13)   COMPONENT CODE: E N G I N E (14)   COMP. SUBCODE: Z (15)   VALVE SUBCODE: Z (16) |

7    8    9    10    11    12    13    18    19    20

(17) **LER/RO REPORT NUMBER**   EVENT YEAR: 7 8   SEQUENTIAL REPORT NO.: 0 0 9   OCCURRENCE CODE: 0 3   REPORT TYPE: L   REVISION NO.:

21    22    23    24    26    27    28    29    30    31    32

ACTION TAKEN: F (18)   FUTURE ACTION: Z (19)   EFFECT ON PLANT: Z (20)   SHUTDOWN METHOD: Z (21)   HOURS (22): 0 0 0 0   ATTACHMENT SUBMITTED: Y (23)   NPRD-4 FORM SUB.: Y (24)   PRIME COMP. SUPPLIER: X (25)   COMPONENT MANUFACTURER: D 2 8 3 (26)

33    34    35    36    37    40    41    42    43    44    47

**CAUSE DESCRIPTION AND CORRECTIVE ACTIONS** (27)

| 1 0 | |

| 1 1 | |

| 1 2 | |

| 1 3 | |

| 1 4 | |

7    8    9    80

| 1 5 | FACILITY STATUS: F (28)   % POWER: 1 0 0 (29)   OTHER STATUS (30): NA   METHOD OF DISCOVERY: B (31)   DISCOVERY DESCRIPTION (32): TESTING |

7    8    9    10    12    13    44    45    46    80

| 1 6 | ACTIVITY RELEASED: Z (33)   CONTENT OF RELEASE: Z (34)   AMOUNT OF ACTIVITY (35): NA   LOCATION OF RELEASE (36): NA |

7    8    9    10    11    44    45    80

PERSONNEL EXPOSURES

| 1 7 | NUMBER: 0 0 0 (37)   TYPE: Z (38)   DESCRIPTION (39): NA |

7    8    9    11    12    13    80

PERSONNEL INJURIES

| 1 8 | NUMBER: 0 0 0 (40)   DESCRIPTION (41): NA |

7    8    9    12    80

LOSS OF OR DAMAGE TO FACILITY (43)

| 1 9 | TYPE: Z (42)   DESCRIPTION: NA |

7    8    9    10    80

PUBLICITY (45)

| 2 0 | ISSUED: Z (44)   DESCRIPTION: NA   NRC USE ONLY |

7    8    9    10    68    69    80

**NAME OF PREPARER** ___ Jack Rischling ___   **PHONE:** 616- 465-5901

GPO 917-926

Other previous events include RO-050-0315/76-36,76-55 and 77-42. This RO is a supplement/revision to RO-050-0315/78-01 and RO-050-0315/78-09.

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After this installation was completed, testing resumed. Testing consisted of 12 diesel starts, 5 starts specifically for the Design Change test procedure.

Absolutely no meter deflections were observed and no diesel trips occured, thus, the noise coming into the module on the 100 V DC relay leads was eliminated.

By February 7, 1978 the shielding and power supply modifications were performed and tested successfully on the Emergency Deisels for both Units. It should be noted that there had never been an overspeed incident resulting from a Blackout start signal or any other signal simulated as part of Preoperational Testing.

NRC FORM 366
(7-77)

U. S. NUCLEAR REGULATORY COMMISSION

# LICENSEE EVENT REPORT

CONTROL BLOCK: | | | · | | | | (1)     (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

| 0 | 1 | | M | I | D | C | C | 1 | (2) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (3) | 4 | 1 | 1 | 1 | 1 | (4) | | | (5) |

7  8  9    LICENSEE CODE    14.  15    LICENSE NUMBER    25  26    LICENSE TYPE  30    57 CAT 58

CON'T

| 0 | 1 | REPORT SOURCE | L | (6) | 5 | 0 | 0 | 0 | 0 | 3 | 1 | 5 | (7) | 0 | 3 | 1 | 3 | 7 | 8 | (8) | 0 | 4 | 0 | 7 | 7 | 8 | (9) |

7  8    60  61    DOCKET NUMBER    68  69    EVENT DATE    74  75    REPORT DATE    80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

| 0 | 2 | DURING PERFORMANCE OF THP STP .204, CONTAINMENT AIR LOCK LEAKAGE TEST ON THE 650 FOOT |

| 0 | 3 | ELEVATION INNER DOOR, THE DOOR SEAL LEAKAGE RATE EXCEEDED THE LIMIT IDENTIFIED IN |

| 0 | 4 | TECHNICAL SPECIFICATION PARAGRAPH 3.6.1.3.  THE TEST WAS STOPPED AND THE SEAL WAS |

| 0 | 5 | INSPECTED AND CLEANED. A RETEST WAS SATISFACTORILY PERFORMED IMMEDIATELY FOLLOWING |

| 0 | 6 | THE ABOVE INSPECTION. |

| 0 | 7 | |

| 0 | 8 | |

7  8  9    80

| 0 | 9 | | SYSTEM CODE | S | D | (11) | CAUSE CODE | X | (12) | CAUSE SUBCODE | Z | (13) | COMPONENT CODE | P | E | N | E | T | R | (14) | COMP. SUBCODE | A | (15) | VALVE SUBCODE | Z | (16) |

7  8    9  10    11    12    13    18    19    20

(17) LER/RO REPORT NUMBER

| EVENT YEAR | 7 | 8 | | | | SEQUENTIAL REPORT NO. | 0 | 2 | 3 | | OCCURRENCE CODE | / | | 0 | 3 | | REPORT TYPE | L | | | REVISION NO. | 0 |

21  22    23    24    26    27    28  29    30    31    32

| ACTION TAKEN | X | (18) | FUTURE ACTION | X | (19) | EFFECT ON PLANT | Z | (20) | SHUTDOWN METHOD | Z | (21) | HOURS (22) | 0 | 0 | 0 | 0 | ATTACHMENT SUBMITTED | N | (23) | NPRD-4 FORM SUB. | Y | (24) | PRIME COMP. SUPPLIER | L | (25) | COMPONENT MANUFACTURER | W | 3 | 0 | 2 | (26) |

33    34    35    36    37    40    41    42    43    44    47

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

| 1 | 0 | THE CAUSE WAS DETERMINED TO BE PAINT CHIPS WHICH WERE FOUND ON THE RUBBER SEAL AND |

| 1 | 1 | APPEARED TO BE OBSTRUCTING THE PROPER SEAL OF THE DOOR.  THE CHIPS WERE CLEANED OFF AND |

| 1 | 2 | A RETEST WAS PERFORMED.  SIGNS ARE BEING CONSTRUCTED WHICH REMIND PERSONNEL TO |

| 1 | 3 | INSPECT THE DOOR SEALS UPON EACH OPENING. |

| 1 | 4 | |

7  8  9    80

| 1 | 5 | FACILITY STATUS | E | (28) | % POWER | 1 | 0 | 0 | (29) | OTHER STATUS | NA | (30) | METHOD OF DISCOVERY | B | (31) | DISCOVERY DESCRIPTION (32) | SURVEILLANCE TEST |

7  8    9    10  12  13    44    45    46    80

| 1 | 6 | ACTIVITY RELEASED | Z | (33) | CONTENT OF RELEASE | Z | (34) | AMOUNT OF ACTIVITY (35) | NA | LOCATION OF RELEASE (36) | NA |

7  8  9    10    11    44    45    80

PERSONNEL EXPOSURES

| 1 | 7 | NUMBER | 0 | 0 | 0 | (37) | TYPE | | (38) | DESCRIPTION (39) | NA |

7  8  9    11    12    13    80

PERSONNEL INJURIES

| 1 | 8 | NUMBER | 0 | 0 | 0 | (40) | DESCRIPTION (41) | NA |

7  8  9    11    12    80

LOSS OF OR DAMAGE TO FACILITY (43)

| 1 | 9 | TYPE | Z | (42) | DESCRIPTION | NA |

7  8  9    10    80

PUBLICITY

| 2 | 0 | ISSUED | N | (44) | DESCRIPTION (45) | NA |     NRC USE ONLY

7  8  9    10    68  69    80

NAME OF PREPARER  T. P. Beilman    PHONE: 616-465-5901

GPO 917-926