



**Consumers
Power
Company**

W. Latham
FILE COPY

General Offices: 212 West Michigan Avenue, Jackson, Michigan 49201 • Area Code 517 788-0550

March 27, 1978

Mr James G Keppler
Office of Inspection and Enforcement
Region III
US Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

DOCKET 50-255 - LICENSE DPR-20 -
PALISADES PLANT - ER-78-007

The attached Palisades Plant Licensee Event Report 78-007 relates to electrical connectors inside of containment and is reportable under Technical Specification 6.9.2.a(a).

David P. Hoffman

David P Hoffman
Assistant Nuclear Licensing Administrator

CC: Director, Office of Nuclear Reactor Regulation
Director, Office of Inspection and Enforcement

MAR 29 1978

LICENSEE EVENT REPORT

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

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
M I P A L 1 2 0 0 0 0 0 0 0 0 0 0 0 0 3 4 1 1 1 1 1 4 5
LICENSEE CODE LICENSE NUMBER LICENSE TYPE CAT 58

CON'T
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
0 1 L 6 0 5 0 0 0 2 5 5 7 0 3 1 3 7 8 8 0 3 2 7 7 8 9
REPORT SOURCE DOCKET NUMBER EVENT DATE REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 During sealing of electrical connectors located inside containment, it
0 3 was found that sockets and/or sealing plugs were missing from several
0 4 connectors which supply power to components required to be operable during
0 5 a DBA. The missing parts result in a path which could permit moisture
0 6 to enter a connector and cause a short across its pins, thereby possibly
0 7 preventing its associated component from functioning as required during
0 8 an accident. See attachment for listing of connectors and components.
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

0 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
X X 11 B 12 B 13 X X X X X X 14 Z 15 Z 16
SYSTEM CODE CAUSE CODE CAUSE SUBCODE COMPONENT CODE COMP. SUBCODE VALVE SUBCODE
17 LER/RO REPORT NUMBER 18 EVENT YEAR 19 SEQUENTIAL REPORT NO. 20 OCCURRENCE CODE 21 REPORT TYPE 22 REVISION NO.
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
F 18 Z 19 Z 20 Z 21 0 0 0 0 22 Y 23 N 24 A 25 V 1 2 0 26
ACTION TAKEN FUTURE ACTION EFFECT ON PLANT SHUTDOWN METHOD HOURS ATTACHMENT SUBMITTED NPRD-4 FORM SUB. PRIME COMP. SUPPLIER COMPONENT MANUFACTURER

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 Wiring of the connectors during initial plant construction was performed
1 1 without ensuring that all holes in the connectors were filled. This
1 2 apparently resulted from inadequate wiring procedures combined with
1 3 insufficient quality control. The connectors will be sealed with potting
1 4 compound prior to resumption of power operations.
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

1 5 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
G 28 0 0 0 29 N/A 30 METHOD OF DISCOVERY 31 Inspection of Connectors 32 DISCOVERY DESCRIPTION
FACILITY STATUS % POWER OTHER STATUS

1 6 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
Z 33 Z 34 N/A 35 AMOUNT OF ACTIVITY 36 LOCATION OF RELEASE
ACTIVITY CONTENT RELEASED OF RELEASE

1 7 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
0 0 0 37 Z 38 N/A 39 PERSONNEL EXPOSURES
NUMBER TYPE DESCRIPTION

1 8 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
0 0 0 40 N/A 41 PERSONNEL INJURIES
NUMBER DESCRIPTION

1 9 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
Z 42 N/A 43 LOSS OF OR DAMAGE TO FACILITY
TYPE DESCRIPTION

2 0 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
N 44 N/A 45 PUBLICITY
ISSUED DESCRIPTION
NRC USE ONLY

Background/Discussion - During the refueling outage which commenced on January 6, 1978, the decision was made to seal certain electrical connectors with potting compound, in order to provide a greater degree of assurance that they would function normally in the event of a Design Basis Accident (DBA). The connectors chosen were those supplying electrical power to components and instruments which are required to be operable during a DBA. During the potting process, several connectors were found to be deficient in that they contained socket locations which were not sealed. This condition results in a path which permits moisture to pass through the connector and thereby could short the circuits associated with the connector.

Connectors Affected - A total of thirteen connectors were deficient. They were furnished by Viking Industries and were the twelve or nineteen pin variety. Sealing of the connectors at socket locations is normally accomplished by a very tight fit at the point the conductor jacket mates with the connector body. The deficient connectors were missing conductors.

Components Affected - As a result of the deficient connectors, the components listed below might not have been able to perform under post-LOCA conditions:

MO 3008 - Loop 1A Low-Pressure Safety Injection (LPSI) motor-operated valve (MOV)

MO 3010 - Loop 1B LPSI MOV

MO 3007 - Loop 1A High-Pressure Safety Injection (HPSI) MOV

MO 3009 - Loop 1B HPSI MOV

MO 3013 - Loop 2B HPSI MOV

MO 3062 - Loop 2B HPSI MOV (Redundant Path)

MO 3064 - Loop 2A HPSI MOV (Redundant Path)

MO 3066 - Loop 1B HPSI MOV (Redundant Path)

MO 3068 - Loop 1A HPSI MOV (Redundant Path)

SV 2113 - Loop 1A Charging Distribution Stop Valve

PT 0751A/PT0751C/PT0752A/PT0752C - Steam Generator Pressure Transmitter

PT 0102A/PT0102C - Pressurizer Pressure Transmitter

Cause - The most probable causes of this condition appear to be inadequate procedures for wiring the connectors, combined with insufficient controls over the installation process during initial plant construction.

Corrective Action - The connectors will be sealed with a potting compound which has been demonstrated to withstand the LOCA environment. The repair will be completed prior to resumption of power operations.