

LICENSEE EVENT REPORT

CONTROL BLOCK: 1 6 1

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 1 L Q A D 1 2 0 0 0 - 0 0 0 - 0 0 0 3 4 1 1 1 1 1 1 5
7 8 9 14 15 25 26 30 57 CAT 58

CON'T

0 1 REPORT SOURCE L 6 0 5 0 0 0 2 5 4 7 0 9 2 1 8 3 8 0 7 2 1 8 3 9
7 8 60 61 68 69 74 75 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES 10

0 2 On September 20 and 21, 1982, while performing surveillance Reactor Core Isolation
0 3 Cooling (RCIC) Area High Temperature Isolation, QIS-28, three switches, 1-1360-14A,
0 4 1-1360-17B, and 1-1360-16C, would not trip. Technical Specification Table 3.2-1
0 5 requires these RCIC steam supply isolation temperature switches to trip at less
0 6 than or equal to 200°F. Used to detect small RCIC Turbine area steam leaks, these
0 7 16 temperature switches are arranged in four one-out-of-two twice logic circuits.
0 8 Only one failed switch was found in any one of these logic circuits, therefore,
0 9 the other three operable switches in each circuit would have performed the design
1 0 function. Thus, there were no safety implications associated with this occurrence.

0 8 7 8 9 80

0 9 SYSTEM CODE CAUSE CODE CAUSE SUBCODE COMPONENT CODE COMP SUBCODE VALVE SUBCODE
7 8 9 10 11 12 13 14 15 16 17 18 19 20
C E 11 E 12 A 13 I N S T R U 14 S 15 Z 16
17 LER RO REPORT NUMBER EVENT YEAR SHUTDOWN METHOD HOURS ATTACHMENT SUBMITTED NPD-4 FORM SUB PRIME COMP SUPPLIER COMPONENT MANUFACTURER
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
C Z 18 Z 19 Z 20 Z 21 0 0 0 0 Y 23 N 24 L 25 U 0 7 5 26
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS 27

1 0 Attached is a copy of the evaluation performed by Commonwealth Edison Company's
1 1 System Materials Analysis Department. No specific mode of failure could be
1 2 identified. Based on this evaluation, we plan no further corrective action at this
1 3 time. We will continue to trend the performance of these switches, and any further
1 4 corrective action will be based upon these failure trends.

1 5 FACILITY STATUS % POWER OTHER STATUS 30 METHOD OF DISCOVERY DISCOVERY DESCRIPTION 32
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
H 28 0 0 0 29 NA B 31 Once Per Cycle Test 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

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

1 7 PERSONNEL EXPOSURES NUMBER TYPE DESCRIPTION 39
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
0 0 0 37 Z 38 NA 39

1 8 PERSONNEL INJURIES NUMBER DESCRIPTION 41
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
0 0 0 40 NA 41

1 9 LOSS OF OR DAMAGE TO FACILITY TYPE DESCRIPTION 43
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
Z 42 NA 43

2 0 PUBLICITY ISSUED DESCRIPTION 45
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
N 44 8308080182 830721 PDR ADOCK 05000254 PDR S

NAME OF PREPARER M Preuss

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JUL 8 '83

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____ B (Operations)
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____ E Personnell

SYSTEM MATERIALS ANALYSIS DEPARTMENT REPORT
ON EVALUATION OF
THREE THERMAL SWITCHES (TYPE F7, MODEL 88B),
MANUFACTURED BY UNITED ELECTRIC CONTROLS CO.
AND USED AT
QUAD CITIES STATION

Initial

At the request of Mr. A. J. Schmidt, Quad Cities Station, an evaluation was performed of three switches used in the reactor core isolation cooling room in Unit 1. The switches are a type F7 - Model 88B, manufactured by United Electric Controls Co. The function of these switches is to monitor temperature near steam lines for steam leak detection. All three switches were in service from 12-17-80 to 9-23-82 and failed to operate during calibration testing. The temperature range for the switches is 70°F to 370°F with a set point of 185°F.

The switches consist of stainless steel cylindrical probes (4.10" long by 0.375" in diameter), filled with a fluid (mainly toluene) and connected to brass bellows with a stainless steel tube (0.90" O.D., ~0.010" I.D.). The cylindrical bellows casing assembly is connected to a microswitch box and contains spacer washers and a microswitch actuator.

It was originally suspected that the probe assembly leaked, losing the filling fluid, and, therefore, would not pass the calibration test. To determine if the probe assembly was defective, the switches were disassembled and the probes submerged in boiling water. Two of the three probe assemblies tested showed noticeable expansion of the bellows, the third did not. Probes from two switches (one of them responding to heating in boiling water and another not responding), were cut transversely and the filling fluid drained. The obtained sections from the switch assemblies were pressurized with compressed air and submerged into water-filled baths. No air leakage was observed.



Commonwealth Edison

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NJK-83-254

July 21, 1983

J. Keppler, Regional Administrator
Office of Inspection and Enforcement
Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Reference: Quad-Cities Nuclear Power Station
Docket Number 50-254, DPR-29, Unit One
Appendix A, Section 3.2.A, Table 3.2-1

Enclosed please find Reportable Occurrence Report Number RO 82-20/03L-1
for Quad-Cities Nuclear Power Station.

This report is submitted to you in accordance with the requirements of
Technical Specification 6.6.B.2.a; an engineered safety system instrument
setting found to be less conservative than those established by Technical
Specifications, but which do not prevent fulfillment of the system's
design requirements. This revision includes the failure analysis which
was performed on the three failed RCIC temperature switches.

Respectfully,

COMMONWEALTH EDISON COMPANY
QUAD-CITIES NUCLEAR POWER STATION

N. J. Kalivianakis
Station Superintendent

NJK:DGC/bb

Enclosure

cc B. Rybak
A. Morrongiello
INPO Records Center

IE 22
1/1