

LICENSEE EVENT REPORT

Update Report-Previous
Report Date 6-30-78

CONTROL BLOCK: _____ (PLEASE PRINT OR TYPE REQUIRED INFORMATION)

01 | I | L | D | R | S | 3 | 2 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 3 | 4 | 1 | 1 | 1 | 1 | 4 | _____ | 5
7 8 9 14 15 25 26 30 37 CAT 58

CON'T
01 | REPORT SOURCE | L | 6 | 0 | 5 | 0 | 0 | 0 | 2 | 4 | 9 | 7 | 0 | 6 | 0 | 7 | 7 | 8 | 3 | 0 | 8 | 1 | 8 | 7 | 8 | 9
7 8 60 61 68 69 74 75 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)
02 | While performing LPCI and CCSW surveillance on Unit 3 prior to taking the U-3 D/G
03 | out of service, a spike was found on the liquid process radiation monitor for the
04 | service water discharge. The sample from 3B-1503 CCHX was found contaminated. It was
05 | immediately isolated. Since the other redundant containment cooling heat exchanger
06 | loop was operable safe plant operation was not impaired. This event occurred twice
07 | previously on 2A CCHX. (Reportable occurrences #50-237/77-20 and 77-56)

09 | SYSTEM CODE | S | F | 11 | CAUSE CODE | E | 12 | CAUSE SUBCODE | D | 13 | COMPONENT CODE | H | T | E | X | C | H | 14 | COMP. SUBCODE | C | 15 | VALVE SUBCODE | Z | 16 |
7 8 9 10 11 12 13 18 19 20
17 | LER/RO REPORT NUMBER | 7 | 8 | 21 | 22 | SEQUENTIAL REPORT NO. | 0 | 2 | 5 | 24 | 26 | OCCURRENCE CODE | 0 | 3 | 27 | 29 | REPORT TYPE | X | 30 | REVISION NO. | 1 | 32 |
ACTION TAKEN | X | 18 | 33 | FUTURE ACTION | X | 19 | 34 | EFFECT. ON PLANT | Z | 20 | 35 | SHUTDOWN METHOD | Z | 21 | 36 | HOURS | 0 | 0 | 0 | 0 | 22 | 27 | ATTACHMENT SUBMITTED | Y | 23 | 40 | 41 | NPD-4 FORM SUB. | N | 24 | 42 | PRIME COMP. SUPPLIER | N | 25 | 43 | COMPONENT MANUFACTURER | P | 1 | 6 | 0 | 25 | 44 | 47

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)
10 | Contaminated sample taken at 3B CCHX service water side indicated possible tube leak.
11 | Hydro test indicated that one tube was leaking. It was subsequently plugged.
12 | _____
13 | _____
14 | _____

15 | FACILITY STATUS | E | 23 | 7 | 4 | 29 | OTHER STATUS | NA | 30 | METHOD OF DISCOVERY | B | 31 | 45 | DISCOVERY DESCRIPTION | Spike on liquid process rad monitor | 32 | 46 | 80

16 | ACTIVITY CONTENT | L | 33 | M | 34 | 4.9 X 10^-4 curies | 35 | 44 | LOCATION OF RELEASE | Reactor building to service water | 36 | 45 | 80

17 | PERSONNEL EXPOSURES: NUMBER | 0 | 0 | 0 | 37 | TYPE | Z | 38 | DESCRIPTION | NA | 39 | 80

18 | PERSONNEL INJURIES: NUMBER | 0 | 0 | 0 | 40 | DESCRIPTION | NA | 41 | 80

19 | LOSS OF OR DAMAGE TO FACILITY: TYPE | Z | 42 | DESCRIPTION | NA | 43 | 80

20 | PUBLICITY ISSUED | N | 44 | DESCRIPTION | NA | 45 | NRC USE ONLY
7 8 9 10 63 69 80

ATTACHMENT TO LICENSEE EVENT REPORT 78-025/03X-1
COMMONWEALTH EDISON COMPANY (CWE)
DRESDEN UNIT-3 (ILDRS-3)
DOCKET # 050-249

While performing LPCI and CCSW surveillance on Unit 3 prior to taking the Unit 3 D/G out of service, a spike was found on the liquid process radiation monitor for the service water discharge. A sample taken from the 3B-1503 CCHX was found to be contaminated. A tube leak was suspected, and the heat exchanger was immediately isolated. At no time during the duration of the LPCI and CCSW surveillance was liquid radioactive waste discharged to the river from Unit 2&3 or Unit 1 radwaste systems. Since the other redundant containment cooling heat exchanger loop was operable safe plant operation was not impaired.

Hydro test results revealed that 1 of the 2510 tubes in the heat exchanger was leaking. Calculations to estimate the amount of radioactive material released were performed using the following parameters. The service water volume trapped in the CCSW piping, when the pumps are not running, is 4,340 gallons. The length of each release was conservatively estimated at 1.24 minutes. The circulating water flow was about 1,017,000 gpm. The activity of the water on the service water side was conservatively assumed to be the same as the activity of the torus water. A gamma isotopic analysis of the D-3 torus water revealed the concentrations of the following nuclides.

Mn 54	1.2×10^{-6}	uCi/ml
Co 58	9.0×10^{-7}	uCi/ml
Co 60	2.2×10^{-5}	uCi/ml
Cs 134	1.5×10^{-6}	uCi/ml
Cs 137	4.2×10^{-6}	uCi/ml
Zn 65	6.0×10^{-7}	uCi/ml

Calculations based on the activity of the contaminated service water and the available dilution flow, revealed that the sum of the ratios of these isotopic concentrations to the maximum permissible concentration was 0.003. This indicates that the concentration in the circulating water canal to the Dresden cooling lake was 0.3% of the applicable 10CFR20 limit. This radioactivity was further diluted by 1275 acres of water in the cooling lake. Thus the health and safety of the public was not affected.

The faulty tube was plugged on both the top and bottom with 3/4" stainless steel tapered plugs. A post maintenance hydro was maintained at about 110 psig for an hour with no other leaks observed.

The heat exchanger is a type 6B-3222 heat exchanger manufactured by Berlin Chapman, a division of Perfex Corporation and was built to ASME III, class "C" and the Tubular Exchanger Manufacturer's Association class "R" standards.