

ATTACHMENT TO LICENSEE EVENT REPORT 77-056/03L-0
COMMONWEALTH EDISON COMPANY (CWE)
DRESDEN UNIT 2 (ILDRS-2)
DOCKET # 050-237

While Unit 2 was in a refueling outage, service water samples were taken at all Containment Cooling Heat Exchangers (CCHX) on both Unit 2 and Unit 3. The sample taken from 2A-1503 CCHX was found contaminated. A tube leak was suspected, and the heat exchanger was immediately isolated. Since this system was not required during the period when it was out of service, safe plant operation was not impaired.

Hydro test results revealed that 12 of the 2510 tubes in the heat exchanger were leaking. The contaminated service water was normally trapped between two valves which were normally closed, and would be discharged to the cooling lake whenever the containment cooling service water pump was turned on. Calculations to estimate the amount of radioactive material released were performed using the following parameters. The service water volume trapped between the two valves is 4,340 gallons. The length of each release was conservatively estimated at 1.24 minutes. The circulating water flow was generally 885,000 gpm. A gamma isotopic analysis of the sample revealed the concentrations of the following nuclides.

Cs 134	4.9×10^{-5}	$\mu\text{Ci/ml}$
Cs 137	6.5×10^{-5}	$\mu\text{Ci/ml}$
Mn 54	1.1×10^{-6}	$\mu\text{Ci/ml}$
Co 60	1.1×10^{-5}	$\mu\text{Ci/ml}$

Using the above data, calculations revealed that the sum of the ratios of these concentrations to the maximum permissible concentrations was 0.03. This indicates that the concentration in the circulating water canal to Dresden Cooling Lake was 3% of the applicable 10CFR20 limits. This radioactivity was further diluted by the 1275 acres of water in the cooling lake.

Wide beta analysis indicated that release contained essentially all gamma emitters as identified above.

The faulty tubes were plugged on both the top and bottom with 3/4" stainless steel tapered plugs. The pressurization was maintained at about 200 PSIG for a few hours with no other anomalies observed.

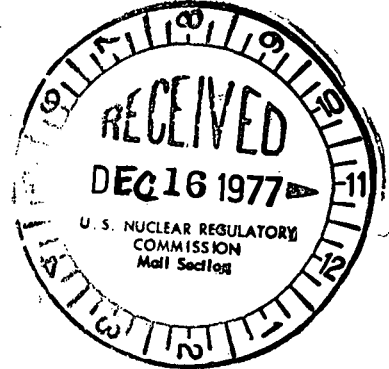
The heat exchanger is a type 6B-3222 heat exchanger manufactured by Berlin Chapman, a Division of Perfex Corporation and was built to ASME 111, Class "C" and the Tubular Exchanger Manufacturer's Association Class "R" Standards. 14 of the tubes were plugged in the previous similar event on May 29, 1977. (Reportable occurrence #50-237/77-20). A monthly surveillance will be initiated to take service water samples to verify that no additional tube leaks are developing.



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REGULATORY DOCKET FILE COPY

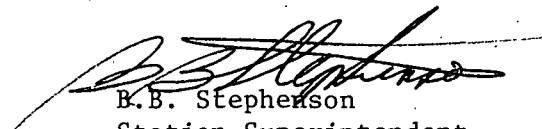


December 2, 1977

BBS:LTR #1124-77

James G. Keppler, Regional Director
Directorate of Regulatory Operations - Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Reportable Occurrence Report #77-056/03L-0, Docket #050-237 is hereby submitted to your office in accordance with the Dresden Nuclear Power Station Technical Specification 6.6.B.2.(d), abnormal degradation of systems other than those specified in item B.1.e designed to contain radioactive material resulting from the fission process.


B.B. Stephenson
Station Superintendent
Dresden Nuclear Power Station

BBS:dlz

Enclosure

cc: Director of Inspection & Enforcement
Director of Management Information & Program Control
File/NRC

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