

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

February 18, 1983

BLRD-50-438/83-15

BLRD-50-439/83-11

U.S. Nuclear Regulatory Commission
Region II

Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

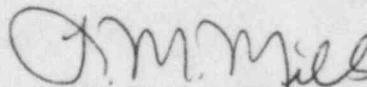
BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 - TUBE LEAKS IN COMPONENT COOLING
WATER HEAT EXCHANGERS - BLRD-50-438/83-15, BLRD-50-439/83-11 - FIRST
INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector
D. M. Verrelli on January 24, 1983 in accordance with 10 CFR 50.55(e) as
NCR 2174. Enclosed is our first interim report. We expect to submit our
next report by June 3, 1983.

If you have any questions, please get in touch with R. H. Shell at
FIS 858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY


L. M. Mills, Manager
Nuclear Licensing

Enclosure

cc: Mr. Richard C. DeYoung, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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LONG REGION
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ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2
TUBE LEAKS IN COMPONENT COOLING WATER HEAT EXCHANGERS
SUPPLIED BY BABCOCK AND WILCOX
BLRD-50-438/83-15, BLRD-50-439/83-11
NCR 2174
10 CFR 50.55(e)
FIRST INTERIM RPEORT

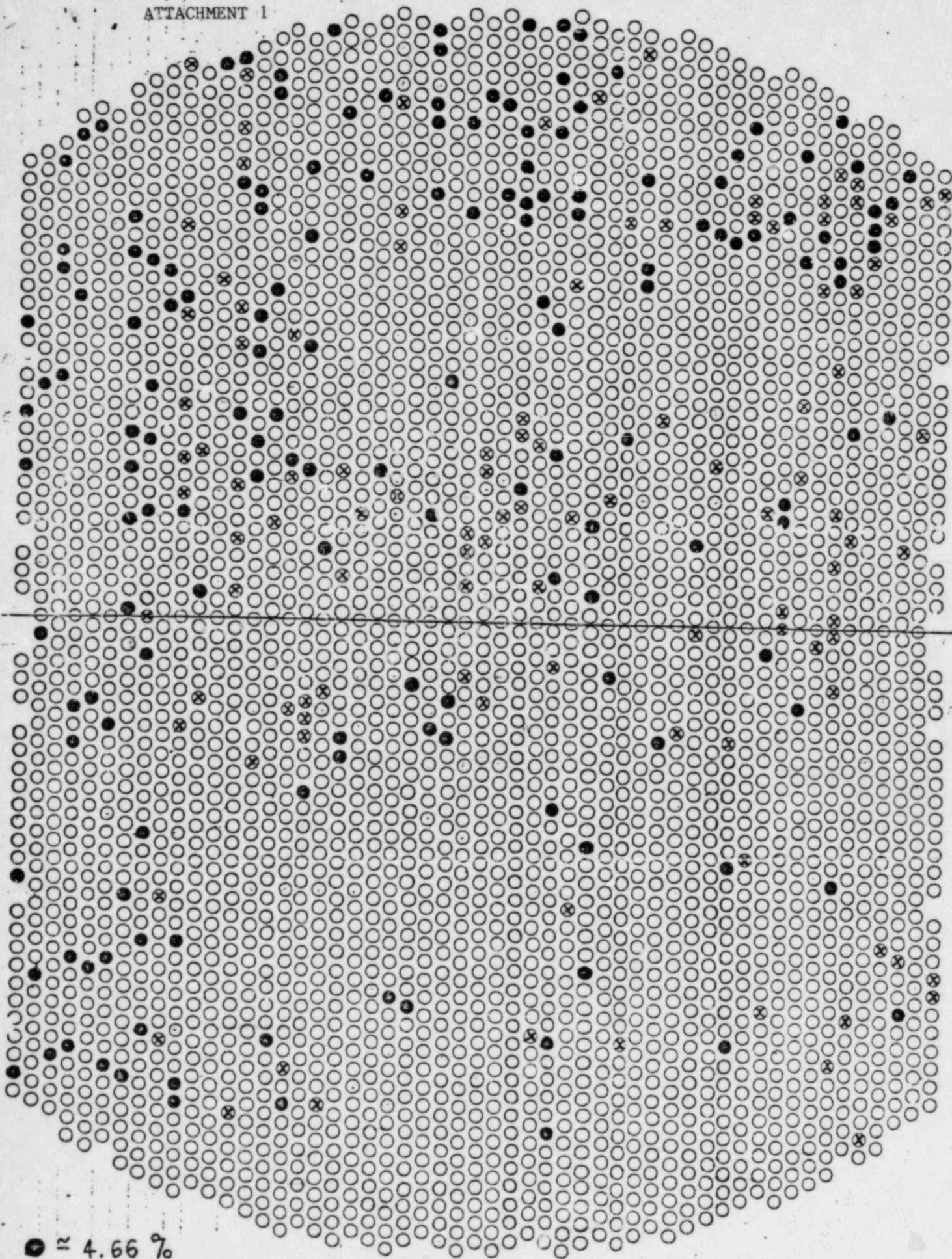
Description of Deficiency

The component cooling water (CCW) coolers are straight tube heat exchangers with essential raw cooling water (ERCW) circulated through the tube side. The CCW coolers are in the main flow path for the ERCW system. ERCW has been periodically circulated through the CCW coolers to provide cooling water to other components. Tube leaks have developed in the loop A cooler in both units 1 and 2. No leaks have yet been detected in the loop B coolers. Before beginning this periodic ERCW circulation, the CCW coolers were hydrotested at Bellefonte, and none of the CCW coolers had leaking tubes at that time.

The cause of the leaks has not yet been determined. However, the inner tube walls appear to be corroding and pitting. Further investigation will be required to determine if this deficiency has generic implications. There have been no similar deficiencies in the past for other Bellefonte heat exchangers supplied by B&W under the nuclear steam supply system contract.

Interim Progress

TVA has forwarded the NCR to B&W for corrective action. TVA and B&W are working to determine the cause of the leaks. The unit 1 CCW coolers will be examined to determine the extent of the tube leakage there. The unit 2 CCW cooler has tube leaks as shown on the attached sketch (attachment 1). Tubes marked in black have definite leaks somewhere in the length of the tube. Tubes marked with an "X" showed evidence of leakage around the rolled joint between the tube and tube sheet and also could have a leak in the length of the tube. As part of the overall effort, two leaking tubes from each cooler will be pulled and metallurgical tests will be performed on them. Then, an eddy current test will be performed on 15 to 20 percent of the tubes to determine the extent and pattern of leaks. Based on the result of the eddy current test, a tube with representative damage will be pulled for further metallurgical examination.



● $\approx 4.66\%$

⊗ $\approx 3.22\%$