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 FACIL:50-316 DONALD C. COOK NUCLEAR POWER PLANT, UNIT 2, INDIANA & 05000316
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 SHALLER,D.V. INDIANA & MICHIGAN POWER CO.
 RECIP.NAME RECIPIENT AFFILIATION
 KEPPLER,J.G. REGION 5, CHICAGO, OFFICE OF THE DIRECTOR

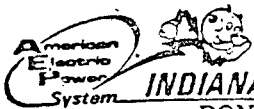
SUBJECT: NOTIFICATION OF LEAKS DISCOVERED IN MAIN FEEDWATER LINES TO
 STEAM GENERATORS 1 & 4 ON 790520.CAUSED BY STRESS
 CONCENTRATION DUE TO TYPE OF WELD & PREPARATION OF FEEDWATER
 LINE.WILL COMPLETELY REPLACE AFFECTED PIPE SECTION.

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INDIANA & MICHIGAN POWER COMPANY

DONALD C. COOK NUCLEAR PLANT
P.O. Box 458, Bridgman, Michigan 49106

May 26, 1979

Mr. J. G. Keppler, Regional Director
Office of Inspection and Enforcement
United States Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

Operating License DPR-74
Docket No. 50-316

Dear Mr. Keppler:

On May 19, 1979 Unit 2 of the Donald C. Cook Nuclear Plant was brought to cold shutdown to determine the source of water that was accumulating in the containment sump. Investigation on May 20, 1979 revealed small leaks in the main feedwater lines to steam generators Nos. 1 and 4. The cracks were found adjacent to the welds of the main feedwater lines to the steam generator nozzles. On May 20, 1979 Mr. Shaller informed Mr. K. R. Baker, NRC Region III Inspector, of these findings. Subsequent radiographic examinations of the nozzle/feedwater line welds for Unit 2 steam generators Nos. 2 and 3 have shown indication of cracks. The same areas in Unit 1 were also radiographed. Examination of those welds in Unit 1 has shown indications in steam generators Nos. 2, 3 and 4 feedwater lines. We were not able to detect the presence of indications in the feedwater line of Unit 1 steam generator No. 1. In each case, the cracks and potential cracks have initiated on the inside surface of the feedwater pipe at a discontinuity.

Our present appraisal is that the problem is stress concentration brought about by the type of weld end preparation of the feedwater line. The feedwater pipe material has lower tensile strength than the steam generator nozzle. The wall thickness of the feedwater pipe is substantially greater than that of the steam generator nozzle. To compensate for the different wall thickness in preparation for the weld, the inside of the pipe was machined in a step-like fashion to match the thickness of the steam generator nozzle. Thus, the stresses are concentrating in this reduced section adjacent to the weld and are being magnified at the point of discontinuity. The solution selected is to eliminate the discontinuity on the pipe inner surface and to increase the strength of the pipe in that area. We plan to completely replace the affected pipe section in all eight steam generators using this new design.

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This report is made to you under the provisions of Technical Specifications 6.9.1.8.i. A written followup report will be transmitted to you.

Sincerely,



D. V. Shaller
Plant Manager

/jas

cc: J. E. Dolan
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