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INDIANA & MICHIGAN ELECTRIC COMPANY

DONALD C. COOK NUCLEAR PLANT
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December 31, 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:

Pursuant to the requirements of the Appendix A Technical Specifications
the following report/s are submitted:

RO 79-049/01T-0

Sincerely,

D.V. Shaller
Plant Manager

/bab

- cc: J.E. Dolan
- R.S. Hunter
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- R.F. Kroeger
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- R.E. Masse RO:III
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During the field inspection of seismic Class 1 Safety Related piping systems, done to comply with IE Bulletin 79-14 requirements, a significant discrepancy was noted in the as-built condition of a 1" diameter auxillary pipe in D. C. Cook Unit #2. This 1" pipe is connected between the reactor coolant piping at the discharge nozzle of the reactor coolant pump and the excess letdown heat exchanger. The significant non-conformance was near the 1" pipe connection to the primary piping. Its cause was that the "as-built" length of the pipe was about 3.0 feet longer than that specified in the mathematical model.

An analysis showed that the 1" pipe connection to the primary piping would be overstressed during both OBE and DBE seismic events. More precisely, the stress levels in the pipe/nozzle connection were above the allowable limit during an OBE and above the yield limit during a DBE. Considering this, there was a probability that a small LOCA could have occurred in case of a DBE taking place. The failure of this line would entail a breach of primary coolant pressure boundary.

The piping system was re-analyzed with two horizontal restraints along the pipe run and all the stresses were within the code allowable limits. The modification, i.e., the additional two restraints, were installed in Unit No. 2. This completes the evaluation of the significant noncompliance and the corrective action, and thus the integrity of the reactor coolant pressure boundary is assured in case of DBE taking place.

A similiar problem does not exist in Unit #1 since the pipe was installed in agreement with the math model.



The details of the stress analysis are shown in Table 1.

TABLE 1

DONALD C. COOK PLANT UNIT #2

Stress Analysis of 1" Pipe (Excess Letdown System)

Computer Code Used	- Dynaflex
Applicable Code	- B31.1, 1967 Edition
Flow Diagram	1-2-5128 1-2-5129A
Normal Operating Pressure	2510 Psig
Pipe Material	ASTM-A376, TP304 (Schedule 160)
Yield Stress	30,000 Psi

Loading Case	Allowable Stress	Calculated Stress (As built Cond.)	Calculated Stress After Modification
D.W. + Pressure + OBE	19080 Psi	22939 Psi	11081 Psi (OK)
D.W. + Pressure + DBE	28620 Psi	43423 Psi	19408 Psi (OK)
Thermal	27350 Psi	-	20501 Psi (OK)

SAFETY EVALUATION

The overstress condition of the one inch diameter excess letdown line was reviewed for its impact on plant safety. An event causing the failure of the subject pipe could have resulted in a one inch diameter loss of coolant accident (LOCA). This range of break sizes is typical of the small LOCA and is analyzed for Cook Plant. FSAR Chapter 14 (yellow pages) section 14.3.2 presents the analysis results for the worst case of small LOCA's. Recent break analyses contained in WCAP-9600 provide similar results for a standard 4 loop Westinghouse NSSS plant (RESAR-3 type). This range of break sizes is well analyzed from many aspects, including core uncover phenomena. Specifically, a one inch diameter LOCA would result in an actuation of the Emergency Core Cooling System (ECCS).

Adequate protection is afforded by the ECCS, in the event that a one inch



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~diameter LOCA would have occurred. Thus this overstress condition did not compromise, at any time, the health and safety of the public.

