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 FACIL: 50-315 Donald C. Cook Nuclear Power Plant, Unit 1, Indiana & 05000315
 50-316 Donald C. Cook Nuclear Power Plant, Unit 2, Indiana & 05000316
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 RECIP. NAME RECIPIENT AFFILIATION
 MURLEY, T.E. Document Control Branch (Document Control Desk)

SUBJECT: Provides response to NRC Bulletin 88-008 re thermal stresses
 in piping connected to RCS.

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AEP:NRG:1069

Donald C. Cook Nuclear Plant Units 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
RESPONSE TO NRC BULLETIN NO. 88-08: THERMAL STRESSES
IN PIPING CONNECTED TO REACTOR COOLANT SYSTEMS

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Attn: T. E. Murley

September 29, 1988

Dear Dr. Murley:

The purpose of this letter is to provide our response to the first of two reporting requirements stated in NRC Bulletin 88-08, "Thermal Stresses in Piping Connected to Reactor Coolant Systems." The bulletin and its two supplements address unisolable sections of piping connected to the reactor coolant system that can be subjected to stresses from temperature stratification or temperature oscillations that could be induced by leaking valves and that were not evaluated in the design analysis of the piping.

In accordance with Action Item 1 of the bulletin, we have reviewed systems with unisolable sections of piping connected to the reactor coolant system and identified those lines that may have been subjected to excessive thermal stresses. The results of our review are provided in the attachment to this letter. The attachment also includes a schedule for completing Action Items 2 and 3 of the bulletin.

Action Item 2 requires non-destructive examination of the piping sections identified by our review in order to provide assurance that there are no existing flaws. In accordance with the bulletin, we propose to complete this non-destructive testing on Unit 2 piping during this current steam generator replacement/refueling outage and the Unit 1 piping during the 1989 refueling outage.

Action Item 3 requires planning and implementing a program to ensure that applicable piping will not be subjected to sufficient

IRL

Dr. T. E. Murley

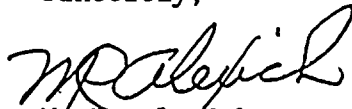
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stresses that could cause fatigue failure. This action will also be completed as indicated above; Unit 2 during this current outage and Unit 1 during the 1989 refueling outage.

A letter of completion will be submitted for the Donald C. Cook Nuclear Plant Units 1 and 2, per the completion schedules contained in Action 4 of the bulletin, after the Unit 1 1989 refueling outage.

Sincerely,



M. P. Alexich
Vice President

ldp

Attachment

cc: D. H. Williams, Jr.
W. G. Smith, Jr. - Bridgman
R. C. Callen
G. Bruchmann
G. Charnoff
NRC Resident Inspector - Bridgman
A. B. Davis - Region III

STATE OF OHIO)
COUNTY OF FRANKLIN)

Milton P. Alexich, being duly sworn, deposes and says that he is the Vice President of licensee Indiana Michigan Power Company, that he has read the foregoing response to NRC Bulletin No. 88-08, "Thermal Stresses In Piping Connected To Reactor Coolant Systems" and knows the contents thereof; and that said contents are true to the best of his knowledge and belief.

Milton P. Alexich

Subscribed and sworn to before me this 29th

day of September, 1988.

Barbara Ann Winkler
NOTARY PUBLIC

BARBARA ANN WINKLER
NOTARY PUBLIC, STATE OF OHIO
MY COMMISSION EXPIRES MARCH 12, 1991

ATTACHMENT TO AEP:NRG:1069

ACTION 1 COMPLETION CONFIRMATION,
REVIEW RESULTS, AND SCHEDULES FOR
COMPLETING ACTIONS 2 AND 3

The following is Indiana Michigan Power Company's response to NRC Bulletin No. 88-08 as applicable to the Donald C. Cook Nuclear Plant.

1) Action 1 Completion Confirmation and Results of Review

We confirm that a review of unisolable sections of piping connected to the reactor coolant system in accordance with Action 1 of NRC Bulletin No. 88-08 has been completed. The following piping sections were identified as having the potential for being subjected to high-cycle thermal stress caused by leaking valves:

- o One 3" alternate charging line to loop 1 cold leg
- o One 2" auxiliary pressurizer spray line
- o Four 1 1/2" high-pressure emergency core cooling system injection lines (one injection line to each cold leg)

The potential for the subject occurrence is present when an interacting system is capable of overcoming reactor coolant system pressure (2250 psi) during power operation. The only such systems at the Cook Nuclear Plant are the chemical and volume control system and the high-pressure portion of the emergency core cooling system. Both of these systems are designed to flow into the reactor coolant system during either normal or emergency conditions. The motive forces used by both systems are provided by the charging pumps, which have an operating discharge pressure of about 2500 psig. Other systems that inject into the reactor coolant system, i.e., the safety injection system and the residual heat removal system (maximum design discharge pressure of 1725 psig and 205 psig, respectively), are not operated during normal power operation.

Additional chemical and volume control system lines that inject into the reactor coolant system were also reviewed. These lines are the reactor coolant pump seal injection lines and the normal charging line. In both cases, flow is continuous during power operation and, therefore, these piping sections are not subjected to this thermal fatigue mechanism.

2) Schedule for Completing Actions 2 and 3

In accordance with Action 2, non-destructive examinations will be performed on the unisolable sections of piping previously identified as having the potential for being subjected to high-cycle thermal

stresses. Ultrasonic and radiography testing techniques are being evaluated to provide the best method or combination of methods to provide assurance that there are no existing flaws. Non-destructive examinations will be performed on the identified Unit 2 piping sections during the present outage. Unit 1 examinations will be performed during the next refueling outage, which is scheduled in the first quarter of 1989.

A preliminary analysis indicates that the piping sections identified by our review are less susceptible to thermal fatigue than those discussed in the bulletin and its supplements due to piping geometry differences. However, in accordance with Action 3, a long-term assurance program is being developed and will be implemented in Unit 2 by the end of the present outage, and in Unit 1 during the next refueling outage in 1989.