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 AUTH. NAME AUTHOR AFFILIATION
 ALEXICH, M.P. Indiana Michigan Power Co. (formerly Indiana & Michigan Ele
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SUBJECT: Provides supplemental info to util 890602 response to
 violations noted in Insp Repts 50-315/88-28 & 50-316/88-32.

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Indiana Michigan
Power Company
P.O. Box 16631
Columbus, OH 43216



AEP:NRC:1090E

Donald C. Cook Nuclear Plant Units 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
INSPECTION REPORTS 50-315/88028(DRS) AND 50-316/88032(DRS);
SUPPLEMENTAL INFORMATION FOR RESPONSE TO VIOLATIONS
SUBMITTED JUNE 2, 1989

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

Attn: A. B. Davis

September 22, 1989

Dear Mr. Davis:

In a letter dated June 2, 1989, (AEP:NRC:1060N) we submitted our response to the violations cited in the subject inspection reports. After review of our response by members of your staff we were requested to provide clarification and additional detail regarding certain of the issues addressed in our response. This letter is in fulfillment of our commitment to provide the requested supplemental information.

The information requested by your staff focused on three specific topics in the areas of piping system design and pipe support design and modification. These topics are addressed below:

1. Inservice Inspection (ISI) Program for Pipe Supports

Further detail was requested regarding the results of the recently completed ISI of Cook Nuclear Plant Unit 1 pipe supports. Specific questions were raised regarding the nature and scope of pipe support modifications performed as a result of ISI findings.

During the last Unit 1 refueling outage, 201 pipe supports were inspected as part of our 10-year ISI program. Of the supports inspected, 66 were discrepant in the as-found condition from their associated design drawings; 19 of these supports were modified to correct missing members, missing welds, larger gaps, or to correct deficiencies in original design. In addition, six spring hangers, although within the allowable working range in the as-found condition, were reset to their

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originally specified condition. The remaining 41 supports differed from design drawings, but conformed to AEP support design criteria and were therefore considered acceptable in the as-found condition.

Since piping system adequacy could not be easily evaluated for supports having missing members or large gaps, analysis of the systems containing these supports were performed. Walkdowns of additional supports in the vicinity of these non-functional supports were performed prior to the analysis to assure functionality and design conformance. In performing these walkdowns, discrepancies from design drawings were identified in an additional 13 pipe supports (not inspected as part of the ISI program). Modifications to 3 of these supports were made in addition to the modifications performed on the 19 ISI supports to return all supports to within the AEP support design criteria. The additional discrepancies identified and corrected were similar to those found in the original discrepant ISI supports. In no case did identified support discrepancies cause the associated piping system stress to exceed the FSAR stress criteria of 1.8 times the allowable stress at system design temperature. The FSAR allowable stress is based on the USAS B31.1 Code for Pressure Piping, 1967 edition. Our review of the ISI findings did identify that, as a minimum, discrepancies for 9 of the 66 supports could have been identified as part of the plant walkdowns conducted in response to Information Bulletin 79-14. This situation will be addressed further in our evaluation of the results of large bore (greater than 2 1/2") piping system walkdowns and reanalyses to be performed by an outside contractor. These walkdowns are discussed below.

2. Walkdown and Reanalysis of Large Bore Piping Systems

Additional information was requested by Region III staff regarding the scope of large bore piping system walkdowns to be performed as a result of recommendations made by the AEPSC Design Confirmation Task Group.

Walkdowns and reanalyses of selected large bore piping systems and pipe supports is to be performed through a contract with Impell Corporation. The scope of the walkdowns involves portions of the Unit 1 residual heat removal, containment spray and component cooling water systems. As-built drawings will be developed by Impell for these piping segments and will then be used to perform an independent seismic reanalysis of those portions of the systems included in the walkdowns. This effort also includes establishment of the as-built configuration of the 104 pipe supports in the involved piping systems. Impell's work is scheduled to begin in the

last week of September 1989, with the system as-built drawings and seismic reanalysis completed by January 1990. As stated in our June 2, 1989 submittal, our evaluation of the results of the large bore system walkdowns is intended to: (a) confirm as-installed piping system and pipe support design acceptability; (b) confirm that any deficiencies in the calculation and analysis process for piping systems and pipe supports do not adversely affect the adequacy of the installed design; and (c) provide a further evaluation of the adequacy of walkdowns performed in response to IE Bulletin 79-14. Our evaluation of the walkdown and reanalysis results will also include a determination of what additional pipe support inspections and piping system reanalyses should be performed and in what time period additional inspections should be completed. The decision to expand the scope or direction of pipe support inspections (with subsequent piping system reanalysis if necessary) will consider the extent to which identified support discrepancies impact the functionality of the piping systems in which they are installed, the number of discrepancies identified, the number of supports requiring modification to return them to within the AEP design guidelines, or the number of identified discrepancies that result in non-functional supports.

3. Acceptance Criteria for Piping Systems and Pipe Supports

Clarification was requested by Region III regarding the way in which we apply FSAR criteria, interim acceptance criteria and other operability criteria in determining the acceptability of installed piping system and pipe support designs. This topic was addressed in a meeting conducted on August 28, 1989, at the Region III offices between Region III and AEPSC management and staff. Information presented by AEPSC at the August 28 meeting is summarized below.

Our evaluations of the results of system inspections and analysis consider both the as-found pipe support configuration discrepancies versus design details and the piping stress in the systems in which discrepant supports are installed. In the case of pipe supports, a support is considered to be acceptable without modification if it can be shown that the as-found configuration conforms to AEP support design criteria which considers the manufacturer's recommended safety margin. For pipe supports that are found to be outside the AEP design criteria, we have established a functionality criterion to enable an operability determination to be made. The functionality criterion under the design basis earthquake load condition requires a safety margin of at least 2.0 in the as-found support configuration. In these instances, the supports are considered functional for the purposes of operability determinations, but are being modified to return them to within the AEP design criteria. If a pipe support in



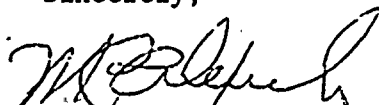
the as-found configuration exceeds the functionality criteria, it is declared non-functional and an evaluation is performed to determine the operability of the associated piping system under the assumption that the deficient support performs no function. The piping system is considered operable if piping stress is within the interim acceptance criteria described in our July 12, 1989 (AEP:NRC:1100). In any event the pipe support is subsequently modified as required to return it to within the AEP support design criteria.

In the case of piping systems, a piping system is considered acceptable without modification if system stresses are within the allowable stress specified in the Cook Nuclear Plant FSAR. The interim acceptance criteria referred to above are used for a determination of system operability if the FSAR allowable stress is exceeded. In the piping evaluations performed to date, pipe stresses in large bore systems would not have exceeded FSAR allowable stresses.

Items 1 through 3 above provide the additional information requested by your staff as per our understanding of the request. In response to a further request, we will update your staff periodically as the large bore piping system walkdowns discussed in Item 2 above progress.

This document has been prepared following Corporate procedures that incorporate a reasonable set of controls to ensure its accuracy and completeness prior to signature by the undersigned.

Sincerely,



M. P. Alexich
Vice President

ldp

cc: D. H. Williams, Jr.
A. A. Blind - Bridgman
R. C. Callen
G. Charnoff
NRC Resident Inspector - Bridgman
NFEM Section Chief

