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 DAVIS, A.B. Document Control Branch (Document Control Desk)

SUBJECT: Responds to weaknesses noted in Insp Repts 50-315/90-21 &
 50-316/90-21 re 900713 electrical accident. Corrective
 actions: addl signs placed on switchgear providing for
 identification of components at all points of entry.

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AEP:NRC:1125I

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 50-315/90021 (DRP) AND 50-316/90021 (DRP);
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

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

Attn: A. B. Davis

December 14, 1990

Dear Mr. Davis:

This letter is in response to Mr. E. G. Greenman's letter dated October 3, 1990, which forwarded the report of a routine safety inspection conducted by members of your staff from July 18 through August 28, 1990, on activities at Cook Nuclear Plant Units 1 and 2. A portion of this inspection, performed by the NRC's Human Factors Assessment Branch, dealt with a review of the electrical accident which occurred at Cook Nuclear Plant on July 13, 1990. The results of this review, contained in Paragraph 3.e of the inspection report, identified weaknesses perceived by the inspectors in our clearance permit, job order and equipment labelling processes. In addition, as stated in the inspection report, the root cause assessment performed by the inspectors determined that "... the licensee did not fully consider the information provided by the NRC (IN 88-96) and industry regarding similar previous events ...". Consequently, Mr. Greenman's letter of October 3, 1990, requested that we review these findings and provide the results of our evaluation to NRC Region III.

The electrical accident that occurred at the Cook Nuclear Plant on July 13, 1990, has been thoroughly investigated and reviewed by Cook Nuclear Plant and Corporate personnel and by the State of Michigan through the Michigan Department of Labor, Bureau of Safety and Regulation (MIOSHA). Our investigating team was comprised of Cook Nuclear Plant and Corporate personnel chosen for their technical expertise and insight gained from their experience and knowledge of plant operations and root cause analysis. The team members included

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a senior manager reporting directly to the President of Indiana Michigan Power Company, an Assistant Plant Manager, an Administrative Compliance Coordinator (who is also our plant Human Performance Evaluation System Coordinator) and a senior engineer from the corporate Transmission and Distribution Section. The team composition was a conscious decision made to ensure that the investigation covered all aspects of the event, was technically accurate and thoroughly addressed the human performance attributes. The exhaustive investigation completed to date lacks only supplemental information to be obtained from one individual involved in the event whose injuries have, thus far, prevented him from giving the necessary interviews. However, we anticipate that this information will serve only to support the conclusions already reached by our investigation.

Upon review of our work control and training processes we have found no inherent deficiencies that significantly contributed to the July 13 electrical accident. Our investigation concluded that failure to adhere to the fundamental electrical safety rules applied at Cook Nuclear Plant led to the event. It is an Indiana Michigan Power Company safety policy that potentially energized equipment should be considered energized until it is positively proven or shown (e.g., in this case by use of a high voltage tester) that the equipment is de-energized. This policy is communicated to all personnel as part of the Nuclear General Employee Training received prior to obtaining unescorted plant access. Our conclusion is supported by the conclusion of the independent MIOSHA investigation. The MIOSHA report concluded that the contract electrician "... was told to wait until test equipment was obtained to test for electricity" and that the accident occurred when "... he ignored that and stepped into the bus making contact with the underside of his left arm and chest."

With regard to the specific concerns expressed by the NRC associated with our clearance permit, job order and equipment labelling processes, although as indicated above we have not identified any deficiencies that significantly contributed to the particular event in question, we have continued to look for ways to strengthen and improve these processes. Enhancements have been made in the electrical maintenance area as part of the Maintenance Department's continuing review and evaluation of all activities that fall within its purview. One of our work control requirements in effect at the time of the July 13 accident was for the supervisor responsible for an activity to ensure that an appropriate job briefing was conducted. This part of our work control process has been improved through adoption of a more formal approach. Currently, a pre-job research and briefing is conducted by the lead person and assigned workers before starting a job. This research and briefing consists of a review of the job scope and obtaining and reviewing applicable prints for key clearance points, troubleshooting sequence, potential pitfalls and understanding of circuit operation. Clearance permit

requests are also subjected to a more detailed review to further ensure they adequately describe the work to be performed. In addition, the assigned workers identify what safety equipment, tools, parts, test equipment and additional permits will be needed and they review the procedures that will be used. These activities further ensure that the assigned workers are fully cognizant of everything involved in a particular job and provide an additional mechanism for bringing to light any uncertainties or questions (including exact location of equipment or components) a worker might encounter before actually starting a job. This formalized process provides improved assurances that both the workers and supervisor are clearly aware of their responsibilities for and involvement in the work process.

In response to the question of equipment labelling, the Cook Nuclear Plant standard for labelling the 4kV switchgear provides for identification of the component at all points of entry and identifies the potential for the switchgear to be energized from an external source, if applicable. Subsequent to the July event we have placed additional signs on the switchgear identifying those who are authorized to open the door of the switchgear. We consider that this adequately addresses the concern regarding signs communicating potential personnel hazards.

As noted earlier, the inspection report forwarded by Mr. Greenman's letter of October 3, 1990, concluded that Cook Nuclear Plant had not fully considered information provided by the NRC in Information Notice 88-96 and by the industry regarding previous events similar to the July 13 electrical accident. We would like to point out that no basis for this conclusion is given in the inspection report, nor was it communicated to Cook Nuclear Plant management while the NRC investigative team was on site. In response to this statement, however, the AEPSC Nuclear Safety and Licensing Section (NS&L) independently reviewed the documentation of our disposition of Information Notice 88-96 and the related industry Significant Event Reports (SERs). NS&L concluded that Information Notice 88-96 and related SERs (SERs 17-88 and 36-87) were adequately addressed by Cook Nuclear Plant personnel. This conclusion is based on an evaluation of documented Cook Nuclear Plant reviews performed at the time the Information Notice and SERs were received and documentation of special safety meetings conducted to disseminate the information contained in them. We do not believe that failure to adequately consider NRC Information Notice 88-96 and related industry experience was in any way a contributor to the July 13 electrical accident.

On the basis of the activities described above, we consider our review of our work control and training processes to be complete. We will, however, continue to strengthen and improve these processes as warranted as a result of our normal self-evaluation programs.

Mr. A. B. Davis

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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
J. R. Padgett
G. Charnoff
NRC Resident Inspector - Bridgman
NFEM Section Chief

