

INDIANA & MICHIGAN ELECTRIC COMPANY

Centrae files

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BOWLING GREEN STATION
NEW YORK, N. Y. 10004

September 23, 1980
AEP:NRC:0451

Donald C. Cook Nuclear Plant Units 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
IE Bulletin No. 80-18

Mr. James G. Keppler, Regional Manager
Office of Inspection and Enforcement
Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Dear Mr. Keppler:

The Attachment to this letter is our response to IE Bulletin 80-18 entitled, "Maintenance of Adequate Minimum Flow Thru Centrifugal Charging Pumps Following Secondary Side High Energy Line Rupture."

Our response to this Bulletin involved an engineering and management review effort of approximately 5 man-weeks. We cannot accurately estimate the manpower requirements of the corrective actions described in the Attachment at this time.

Very truly yours,



R. S. Hunter
Vice President

- cc: N. C. Moseley - NRC
- R. C. Callen
- G. Charnoff
- John E. Dolan
- R. W. Jurgensen
- D. V. Shaller - Bridgman
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ATTACHMENT TO AEP:NRC:0451

DONALD C. COOK NUCLEAR PLANT RESPONSE TO IE BULLETIN 80-18

Response to Action Item 1:

The calculations outlined in the Bulletin's enclosure were performed for the Cook Plant centrifugal charging pumps (CCP's). The results for the most limiting pump, yield a maximum Reactor Coolant System (RCS) pressure, at which a minimum flow of 60 gpm can be maintained, of 2393 psig as compared to the pressurizer safety valve setpoint of 2510 psig.* Thus the calculations, which have utilized several conservative assumptions, indicate that the availability of minimum cooling flow for the CCP's is not assured for all conditions outlined in the enclosure to the Bulletin.

Response to Action Item 2:

- (a) The following modification will be made to the CCP minimum flow line to assure adequate charging flow. The minimum flow valves, which are presently installed in series in a common return line, will be relocated to provide a separate isolation valve for each pump. These valves will close on a SI signal and reopen if the RCS pressure rises to a chosen setpoint. Thus, if a repressurization should occur after the SI signal has initiated the minimum flow valves closure, the valves will automatically open to assure adequate flow.
- (b) As a result of this modification, no manual operator action is required for any transient requiring safety injection. Therefore, revision to the plant emergency procedures is not required.
- (c) The minimum flow isolation valves and associated controls will be safety grade. In the event of a loss of offsite power, the power supply will be derived from the emergency diesel generators.
- (d) An analysis of maintaining the minimum flow path open during a high energy line break has been performed by Westinghouse. We have reviewed this analysis and concur with the Westinghouse conclusion that the feedwater line break and steam line break analyses as reported in the FSAR are not adversely affected by this assumption.
- (e) The modifications described above do not affect any Technical Specifications.

Response to Action Item 3:

The information provided above partially responds to this item. Additional information is provided below.

*Including 1% error.



The modifications described above will be installed in each Unit, during the next Unit outage of sufficient duration when the needed materials are available. The existing automatic closure of the minimum flow valves upon an SI signal will not be altered. This provides maximum small LOCA mitigation capability. Possible RCS repressurization to a pressure at which CCP "dead-heading" occurs, can only take place if the pressurizer PORV's do not operate properly during the secondary side break. The Cook Plant is equipped with three pressurizer PORV's and coincidental failure of all three is considered highly improbable. In addition, if such an unlikely event should occur and all PORV's fail, the design function of the CCP's during a high energy line break, which is to deliver an adequate amount of boron from the Boron Injection Tank to shut down the core, will be accomplished before the potential pump "dead-heading" occurs. On the basis of these considerations, the continued operation of the Cook Units is justified until the modifications described in the response to Action Item 2 are performed.