JUN 19 1980

INDIANA & MICHIGAN ELECTRIC COMPANY

P. O. BOX 18
BOWLING GREEN STATION
NEW YORK, N. Y. 10004

Donald C. Cook Nuclear Plant Unit Nos. 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74

June 17, 1980
AEP:NRC:00420

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

Dear Mr. Keppler:

The attachment to this letter contains our response to IE Bulletin No. 80-12, "Decay Heat Removal System Operability", which was transmitted to us via your letter of May 9, 1980. As per the provisions of the bulletin, this response is submitted pursuant to the requirements of 10CFR50.54(f). An extension to answer this bulletin until June 16, 1980 was granted over the telephone by a member of your staff.

IMECo interprets 10CFR170 Part 22 as requiring that no fee accompany this submittal.

Very truly yours,

John E. Dolan

John E. Dolan
Vice President

cc: R. C. Callen
G. Charnoff
R. S. Hunter
R. W. Jurgensen
D. V. Shaller
N. C. Moseley - NRC

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County of New York)

John E. Dolan, being duly sworn, deposes and says that he is Vice President of Indiana & Michigan Electric Company; that he has read the foregoing statements and knows the contents thereof; and that said contents are true to the best of his knowledge and belief.

John E. Dolan

Subscribed and sworn to before me this 17th day of June 1980.

Kathleen Barry

Notary Public

KATHLEEN BARRY
NOTARY PUBLIC
No.
Qualified
Certificate filed
Commission
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ATTACHMENT TO AEP:NRC:00420
DONALD C. COOK NUCLEAR PLANT UNIT NOS. 1 AND 2
RESPONSE TO IE BULLETIN NO. 80-12

Actions to be Taken by Licensees of PWR Facilities

Our responses to each of the Bulletin's Action Items follow:

Response to Item No. 1

Our review of the incident that occurred at Davis-Besse Unit No. 1, as described in IE Information Notice No. 80-20, shows that such an incident is not likely to happen at Donald C. Cook Plant. This conclusion is based upon the following:

(1) ECCS switch-over from the injection mode to the recirculation mode is accomplished through a series of manual operations from the control room, as described in Chapter 6 of the Cook Plant FSAR. Details of the operator actions required to accomplish this switch-over are contained in our responses to NRC Question Nos. 6.20 and 212.36.

(2) Valves ICM-305 and ICM-306 in the redundant supply lines from the containment sump are interlocked with the RHR pump suction supply valves (IMO-310 and IMO-320) so that the supply line(s) from the sump cannot be opened until the RHR pump suction valve(s) is (are) fully closed. These interlocks are train oriented and will prevent air from getting into the RHR pump suction. (Reference: Response to NRC Question No. 212.36 - Appendix 'Q' to the FSAR).

(3) Power is locked out to valves IMO-128 and ICM-129 in the normal RHR suction line from the loop 2 hot leg whenever the RCS is open to the atmosphere to prevent inadvertent valve closure and consequential interruption of RHR flow. This administrative control effectively prevents air from getting into the RHR pump suction. (Reference: Response to NRC Question No. 212.5 - Appendix 'Q' to the FSAR).

(4) To prevent damaging both RHR pumps in the unlikely event that suction should be lost, only one RHR pump is in operation when the RCS is open to the atmosphere. (Reference: Response to NRC Question 212.5 - Appendix 'Q' to the FSAR).

(5) A low flow alarm is located at the discharge of the RHR pumps. This alarm is set for a higher flow than what is required for the mini-flow line, giving the operator ample time to take corrective action before the RHR pump can be damaged.

The implications of IE Bulletin No. 80-12 and IE Information Notice No. 80-20 have been reviewed by all affected plant department heads and together with all procedure modifications (see below) will be reviewed by all licensed operators as part of the requalification training program.

Response to Item No. 2

All reportable and non-reportable events associated with the RHR system have been reviewed for their impact on decay heat removal capability. All events except one involved the temporary unavailability of redundant equipment when the RHR system was not being used in the decay heat removal mode.

The one exception was an event which occurred with the RHR system in operation, and the reactor coolant system drained to half-loop with the reactor vessel head installed. The east RHR pump was being placed in service and the west pump being removed to switch pumps prior to performing a blackout test on one train. When the east pump was started with the west pump still running, flow irregularities seemed to be indicated by the fluctuation in the pump motor amps. The pumps were both shut down. To restore pump suction, the level in the RCS was increased and the system vented. The west RHR pump was restored and flow was established without any problem. Total time without core flow was approximately 50 minutes.

It appears that this condition may have been the result of operating both pumps with the RCS at one-half loop. Since there is a common suction line from the RCS to the RHR pumps for the cooldown loop, the vortex created by the operation of both pumps was large enough to allow air to be drawn into the pumps.

To prevent a recurrence of this problem, the applicable operating procedures were changed for both Unit 1 and Unit 2 by adding a requirement not to operate both RHR pumps when the RCS is drained to half-loop.

Response to Item No. 3

A review of the RHR system redundancy and diversity was undertaken in answering NRC Questions 212.5 and 212.32. This review described RHR diversity when:

(1) The reactor coolant system is closed and pressurized

(2) The reactor coolant system is depressurized and vented, with air in the steam generator tubes, with the reactor vessel head on, with or without bolting

(3) The reactor coolant system is open with the reactor vessel head off and the refueling canal filled.

Our responses to these questions are contained in Appendix 'Q' to the FSAR. In all cases adequate core cooling capability is maintained.

Response to Item No. 4

The applicable procedures have been reviewed for adequacy of safeguarding against loss of redundancy and diversity of decay heat removal capability. The following specific items have been accomplished:

a. The outage and Design Change Coordinator has reviewed scheduled RHR system maintenance to minimize the impact of required maintenance and testing on overall system availability.

b. An Operations Department memo has been issued instructing the Shift Operating Engineer to only permit RHR system equipment to be removed from service to perform absolutely required maintenance when the RHR system is operating in the decay heat removal mode. If the equipment has to be removed from service, consideration must be given to alternate decay heat removal methods.

c. A Plant Manager's Standing Order has been issued requiring that during the condition when the reactor coolant system is depressurized and vented with air in the steam generator tubes, and the reactor vessel head in place (with or without bolting), both RHR trains must be available with either both emergency diesel generators or one diesel generator and the alternate reserve source available. Reference to this standing order has been incorporated in the applicable operating procedures.

d. A requirement to only have one RHR pump in operation whenever the reactor coolant system is drained to half-loop and vented, has been incorporated into our procedures. The second pump will be in manual standby.

e. When the RHR system and the low pressure RCS over-pressurization control system are in service, power to both isolation valves in the suction line from the hot leg to the RHR pumps is locked out to prevent inadvertent valve closure.

Response to Item No. 5

The abnormal and emergency operating procedures associated with degradation or loss of RHR capability have been reviewed. This review revealed areas that need improvement, especially in the areas of responses required when all redundant systems are not available due to either maintenance, surveillance inspection and testing, or refueling activities. These changes will be completed as soon as possible but no later than September 1, 1980. The controls described in our Response to Item 4 provide assurance that adequate Decay Heat Removal capability will be maintained at all times.

Response to Item No. 6

Refer to Action No. 4 for controls that have already been implemented. The final review will be completed by September 1, 1980.

Conclusion

The electrical power source redundancy and diversity, as described in Enclosure 1, coupled with the administrative controls discussed in our response to Item No. 4 and the valve interlocks described in our response to Item No. 2, provide reasonable assurance that diverse and redundant means of decay heat removal are maintained. During Modes 1 through 4 compliance with the Plant Technical Specifications assures the availability of multiple, independent, diverse, and redundant means of decay heat removal.

A review of the plant operating history reveals that at no time have two redundant DHR trains been unavailable due to mechanical or electrical problems. This fact in of itself verifies the high reliability of the installed equipment.

ENCLOSURE 1

Electrical Power Source Redundancy/Diversity

Auxiliary electric power diversity at Donald C. Cook Plant is as follows (refer to one-line sketch 103079, attached).

There are two (2) independent offsite power sources and two (2) independent onsite emergency power sources at Donald C. Cook Plant. They are:

1. Preferred Offsite Power Source (34.5 kV).

2. Alternate Offsite Power Source (69 kV).

3. Emergency Onsite Diesel Generator, Train "A".

4. Emergency Onsite Diesel Generator, Train "B".

The 34.5 kV Preferred Offsite Power Source originates at both the 345 kV and 765 kV substations outside the plant. Transformer banks #4 (765/345/34.5 kV) and #5 (345/34.5 kV) provide power to the reserve auxiliary power transformers (34.5/4 kV) that serve the plant auxiliary loads.

The 69 kV Alternate Offsite Power Source originates at the Derby substation (138/69 kV) and comes to the plant through separate right-of-way from both the 345 kV and 765 kV lines.

In reference to the event discussed in NRC IE Bulletin 80-12, should we lose the Preferred Offsite Power Source while in the refueling mode when one of the diesel generators is out for maintenance, we would still have available the redundant train diesel generator plus the Alternate Offsite Power Source with the ability to serve both safety trains' 4 kV and 600 volt buses.