Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

February 24, 1992

U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Document Control

Subject: Dresden Nuclear Power Station Units 2 and 3
Response to Information Requested in
Inspection Report 50-237/91031; 50-249/91034
NRC Docket Numbers 50-237 and 50-249

References: (a) B. Clayton letter to Cordell Reed dated December 26, 1991 transmitting NRC Inspection Report 50-237/91031;50-249/91034

(b) H.L. Massin letter to C.W. Schroeder dated December 13, 1991

Enclosed is Commonwealth Edison's response for additional information requested in reference a. Attachment A provides information regarding Open Item 50-237/91031-02. Attachment B, an overview of the results of the Operability and Safety Assessment for Dresden Station Units 2 & 3 Divisional Separation of Feeder Cables provides information regarding Unresolved Item 50-237/91031-03. The assessment, Reference b above, has been forwarded to the Dresden NRC Senior Resident Inspector.

If there are any questions or comments regarding this response, please contact Denise Saccomando, Compliance Engineer, at 708/515-7285.

Very truly yours,

T.J. Kovach
Nuclear Licensing Manager

Attachment

cc: A. B. Davis, Regional Administrator, Region III
B. L. Siegel, Project Manager, NRR
W. G. Rogers, Senior Resident Inspector, Dresden

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ATTACHMENT A

RESPONSE TO INSPECTION REPORT

OPEN ITEM 50-237/91031-02

Question: When will the control relays for all of the isolation valves supplied by the 120 VAC Isolation Bus be replaced in both units?

Response: Modifications M12-2(3)-88-60 were initiated to replace the control relays (HMA111B9) on all affected Group I Isolation valves. Replacement of the Unit 3 Group I relays has been completed during the current refuel outage. The Unit 2 relays are scheduled for replacement during the next scheduled unit 2 refuel outage (D2R13) which is currently planned for January 1993.

An investigation is being initiated through Corporate Engineering to review HMA111B9 relays, assess potential aging effects on the Instrument Bus, and recommend the best resolution to the unplanned Primary Containment Isolation Valve closures. Action required to eliminate the spurious actuation of the relays will be determined based on the results of the investigation.

Question: What is the minimum voltage and pulse width that will drop-out existing HMA relays?

Response: Twelve HMA relays were removed from Unit 3 Group I isolation circuits and tested to determine drop-out voltages and pulse widths that would allow relay contact change-of-state. The testing consisted of energizing each relay above its pick-up voltage, then slowly lowering the voltage until the relay de-energized. The highest voltage, at which a relay was observed to de-energize, was 58.0 VAC; the lowest voltage was 52.1 VAC. In addition, pulse widths were determined by measuring the time it took for the relay contacts to change state once the relay was de-energized. The shortest pulse width, at which a relay contact was observed to change state (relay 'A' contact, which is used in the Group 1 circuitry), was 0.1 milliseconds.

Question: Are the HGA contact ratings an acceptable HMA replacement for this application?

Response: A comparison of the technical data for both the existing HMA relay and the HGA replacement relay was performed. From this comparison, it was determined that the HGA relay is a suitable replacement for the HMA relay for this application.

Question: What training will be provided to the operators to prevent operational confusion when isolation valves spuriously close without group isolation signal?

Response: The Production Training Department Dresden Simulator Group will include training on this item on the simulator during training cycle 4, which is scheduled to begin in June, 1992.

Question: What evaluation was performed to determine that relay replacement was the best alternative rather than providing a regulated supply to the Isolation Valve Bus?

Response: Commonwealth Edison had a study performed to evaluate the root cause of the spurious Group I valve actuations, and evaluate different solutions to the problem. The root cause of the spurious Group I valve actuations was identified as drop-out of HMA relays, due to momentary power losses experienced at the Instrument Bus during 4 KV power transfers. The recommendation of this report was to install an uninterruptable power source with a dedicated DC battery and charger.

It is believed that there are other alternatives to this recommendation and with the installation of the HGA relays, spurious valve actuations during 4 KV power transfers would be prevented. Based upon space availability and financial considerations, replacing the HMA relay would provide the necessary solution to perform 4 KV power transfers without spurious Group I valve actuations.

ATTACHMENT B

RESPONSE TO INSPECTION REPORT

UNRESOLVED ITEM 50-237/91031-03

OVERVIEW OF OPERABILITY AND SAFETY ASSESSMENT FOR

DRESDEN STATION UNITS 2 & 3

DIVISIONAL SEPARATION OF FEEDER CABLES

The following provides an overview of the safety and operability review of the Dresden Station Unit 2 and 3 Divisional Separation of Feeder Cables to Motor Control Centers (MCC) 28-2, 28-3, 29-2, and 38-2; and the corrective actions taken to ensure proper cable separation. A copy of the assessment has been provided to the Dresden NRC Senior Resident Inspector.

SAFETY ASSESSMENT

The issue is that the segregation codes assigned to main power feed cables for six turbine building Engineered Safeguards Systems (ESS) MCCs are inconsistent with the divisional designations of the MCCs. This inconsistency results in the lack of separation between cables providing redundant safety functions. To ensure plant safety, this lack of physical separation between redundant systems would require that credible single failure criteria be assessed.

A review of the previous routing of the feeds to MCCs 28-2, 28-3, 29-2, and 38-2 was conducted along with a review of possible events that could cause cable tray failure. The possible events are as follows:

- tornado missiles
- turbine missiles
- seismic
- internal missiles
- high energy line break
- fire
- flood

In addition, possible failure of the cables in the cable trays was reviewed.

The results of this review showed no single active failure resulting in the failure of a cable tray needs to be postulated, hence, a single active failure is not postulated. Any scenario resulting in failure of the feeder cables to the MCCs is no worse than the fire event and is, therefore, bounded by the 10CFR50 Appendix R safe shutdown analysis.

Procedures exist to shut down the reactor in the event of a fire in the areas of the plant were these cable trays are routed (DSSPs 100-B1 and 100-A2/B2). Therefore the issue of cable separation has minimal impact on plant safety.

OPERABILITY REVIEW

An operability determination was performed on the prior-existing cable segregation for the feeder cable to MCCs 28-2, 28-3, 29-2, and 38-2.

The operability determination reviewed the safety function of the affected equipment (equipment powered from MCCs 28-2, 28-3, 29-2, and 38-2), the affect on the ability of affected equipment to fulfill their safety functions, the effect on Technical Specifications for the system or component, and the affect on FSAR required functions of the system or component. This determination provided a discussion of the plant's design bases, design criteria, and related licensing issues.

The following documents were reviewed to identify the design basis and licensing commitments:

- FSAR/FSAR Amendments
- UFSAR
- Unit 2 Safety Evaluation Report (SER) dated October 17, 1969
- Unit 3 SER dated November 18, 1970
- Systematic Evaluation Program Documentation, specifically correspondence on Topics VI-7.C.1, "Appendix K - Electrical Instrumentation and Control (EI&C) Re-revisions", VII-3, "Systems Required for Safe Shutdown", VIII-2, "Onsite Emergency Power Systems (Diesel Generator)", and NUREG - 0823, "Integrated Plant Assessment Systematic Evaluation Program Dresden Nuclear Power Station, Unit 2".
- Reg. Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Access Plant and Environment Conditions During and Following an Accident', correspondence and compliance report.
- Dresden Appendix R Safe Shutdown Report (FPPDP Volume 3, Book 1).
- GE Specification 22A2501, "Separation Requirements for Reactor Safety and Engineered Safeguards Systems", January 28, 1969.

A review of this documentation shows that discussions regarding physical separation are centered on meeting single failure. If this criterion is met, commitments to the NRC are satisfied. As discussed above, the single failure criterion is met. However, since the issue of single failure is generally addressed by conservatively designing for physical separation, and to eliminate any further questioning on this issue, it was decided it would be prudent to reroute the cables of concern.

To ensure proper divisional cable separation, feed cables to the following MCCs have been rerouted:

Unit 2 Division I SWGR 28 to MCC 28-2
Unit 2 Division I SWGR 28 to MCC 28-3
Unit 2 Division II SWGR 29 to MCC 29-2
Unit 3 Division I SWGR 38 to MCC 38-2

A review of other MCC power feeds was performed. To determine the magnitude of this issue, the segregation code of the main power feed cable to each MCC powered from the ESS 480V unit substations was reviewed to determine if its segregation agreed with the divisional (or non-divisional) assignment of the MCC. Additionally, the physical location of each MCC was identified to determine if there was any correlation between locations and segregation code assignment non-consistencies.

This review found the four cable feeds discussed above and, additionally, a concern with the cable feeds to MCCs 38-3 and 39-2. These additional concerns did not require the reroute of cables. In this case, routing points were upgraded from being non-divisional to divisional.