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October 31, 1980

Mr. Darrell G. Eisenhut, Director
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Dresden Station Units 2 and 3
Fire Protection Safe
Shutdown Analysis
NRC Docket Nos. 50-237/249

Reference (a): D. G. Eisenhut letter to J. S. Abel
dated October 1, 1980

Dear Mr. Eisenhut:

Reference (a) requested our proposed plans and schedules to provide alternate shutdown capability for fire protection for Dresden 2 and 3. This request was based on a review performed by Brookhaven National Laboratory (BNL), which was provided in the July 9, 1980 letter from Robert E. Hall (BNL) to Robert C. Ferguson (NRC) and was attached to Reference (a).

Our evaluation of the BNL review indicates that there may not have been complete understanding by BNL of our previous safe shutdown submittals or the NRC Staff's safety evaluation for Dresden 2 and 3, and since the BNL review there have been changes in the latest requirements of the proposed Appendix R. This evaluation is enclosed in Attachment 1 to this letter and provides a section by section response to any deficiencies identified in the BNL review. Based on this evaluation, we have concluded that our fire protection features currently installed or in progress are sufficient to assure safe shutdown capability and no additional alternate shutdown capability is required.

Please address any questions concerning this matter to this office.

One (1) signed original and thirty-nine (39) copies of this transmittal are provided for your use.

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Very truly yours,

Robert F. Janecek

Robert F. Janecek
Nuclear Licensing Administrator
Boiling Water Reactors

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cc: RIII Inspector - Dresden

ATTACHMENT 1

Dresden 2/3

Response to NRC Letter dated October 1, 1980
Fire Protection Safe Shutdown

Question:

Brookhaven National Laboratory (BNL) letter, paragraph 1.1

The documentation submitted is legible and provides references back to the Fire Hazard Analysis prints which show the fire zones and safety related equipment clearly. Some safety related electrical trays are shown in plan view; however, no electrical prints were submitted showing tray elevation and no conduit prints were submitted with this documentation. As a result cable identification and location are not available for review.

Response

Each analysis contained in Section 3.0, Area Analyses, of the Dresden 2/3 Safe Shutdown Analysis includes a list of Shutdown Related Cable Functions; i.e., all safe shutdown related cables which are routed through the analyzed fire area/zone. These functions are considered lost due to a postulated fire in that zone, unless the function can be performed locally and/or manually. Due to this conservative assumption, the exact location or elevation of a specific cable in the zone under consideration is irrelevant. See the response to Question 8(b) in the January 22, 1980 letter from R.F. Janecek, Commonwealth Edison Company, to T.A. Ippolito, Nuclear Regulatory Commission.

Question:

BNL letter, paragraph 1.2

Accurate valve and instrument locations cannot be determined from the submitted documentation, these are needed to make a complete review of the safe shutdown analysis.

Response

Valve and instrument locations are given by column/row coordinate, elevation, and fire area/zone in Tables 2-2 (Unit 2) and 2-3 (Unit 3) of the Dresden 2 & 3 Safe Shutdown Analysis. Similarly, locations of additional valves utilized for cold shutdown are listed in Tables A2.2 and A2.3 of the Dresden 2 & 3 Cold Shutdown Analysis Supplement.

Question:

BNL letter, paragraph 3.1

Section II, B, Loss of Offsite Power; states that "Fire Detection and Suppression System Protection Sytems necessary to achieve and maintain safe shutdown shall be capable of functioning with or without off-site power." Section III, L.3, and Section III, L.4 both state that "... They shall also be capable of being powered by on-site and off-site electric power systems or by on-site power systems that are independent of the on-site and off-site electric power system."

The licensees submittals (ref. d) page 1-5, item 1.4 Assumptions #1 - precludes the loss of offsite power, and ref. (e) page 3, item A.14 refers back to item 1.4 of ref. (d).

Response

The Dresden 2 & 3 Safe Shutdown Analysis was submitted prior to issuance of the proposed Appendix R to 10 CFR Part 50. A modification is currently being installed to power fire detection and suppression systems from emergency power sources. When this modification is completed, detection and suppression systems will be capable of functioning with or without off-site power, in compliance with proposed Appendix R. This modification is expected to be complete by January 1, 1981.

Question:

BNL letter, paragraph 3.2

Section III, J, Emergency Lighting, calls for eight-hour rated emergency sealed beam on fluorescent units.

This SER Section 4.6 does not address the eight-hour rated requirements.

Response

The Dresden 2 & 3 Fire Protection Report, April 1977, Page 3.4-17, states the following:

"Fixed emergency lighting is installed at selected locations throughout the plant. The units have individual 3-hour rated battery power supplies.

Emergency lighting with an 8-hour minimum battery capacity is not currently available."

The NRC Safety Evaluation Report Section 4.6 of March 1978 states that the described lighting systems are acceptable. 3 hour portable battery powered emergency lights are installed at many locations at Dresden Station. These units may be moved from their "installed" location to the location where they are needed. It is estimated that replacement of the 3 hour lights with 8 hour lights would cost in excess of $50,000. An expenditure of this magnitude is not justified to provide a marginal improvement in emergency lighting for fire protection purposes.

Question: BNL letter, paragraph 3.3

Section III, M, Fire Barriers, calls for three-hour barriers (or justification by analysis between fire areas.

The licensee's submittals do not show three-hour barriers between all fire areas. The detailed review will determine whether or not the justification submitted is adequate.

Response

Section 4.11 of the Dresden 2/3 Fire Protection SER indicates that the NRC Staff review of fire barriers has found them acceptable subject to completion of modifications identified in Section 5 of the SER. Another review by the NRC Staff or its consultants doe not seem justified.

Question: BNL letter, paragraph 3.4

Section III, N, Fire Barrier Penetration Seal Qualification, states "The fire barrier shall be tested with a pressure differential across it (higher pressure on the exposed side) that is equivalent to the maximum pressure differential a fire barrier in the plant is expected to experience unless such pressure differentials are shown to have no effect on the performance of the penetration seal."

The submittals do not meet the method of testing "delta" p, and will require further study curing the detailed review.

Response

Neither IEEE nor ASTM has required a positive pressure differential in the furnace during test. These standards or draft standards have been written by professional personnel knowledgeable in the field, and they have not felt that a positive pressure within the furnace to be necessary to achieve valid result. Based on this observation, it is our judgement that any gain in safety obtained by having a positive pressure in the test furnace is minimal and does not justify the effort.

The more recent proposed Appendix R forwarded to the Commission on September 30, 1980 has deleted this as a qualification requirement.

Question: BNL letter, paragraph 3.5

Section III, G, Protection of Safe Shutdown Capability, 1.m, states "The design of the protective features shall consider:... the failure of automatic fire suppression systems."

The submittals do not specifically address the failure of automatic fire suppression systems.

Response

The Dresden 2 & 3 Safe Shutdown Analysis describes the detection systems, manual fire suppression, and alternate shutdown capability for the fire areas which contain safe shutdown equipment. These measures are sufficient to assure safe shutdown in the event that the automatic fire suppression system in a particular fire area fails. The minimum fire protective features listed in Section III G, Item 2, of proposed Appendix R are provided at Dresden 2 & 3.

Conclusion

It is the Commonwealth Edison Company position that the Dresden 2/3 Fire Protection Safe Shutdown Analysis and Supplement 1, Cold Shutdown Analysis does describe an acceptable alternate shutdown method for a fire postulated in any one of the fire areas/zones in the plant. All modifications to provide alternate shutdown capability have been previously described, and are complete or nearing completion. These modifications when completed will assure safe shutdown capability for a fire in any area/zone for Dresden Units 2 and 3.