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September 2, 1987

Mr. A. Bert Davis
Regional Administrator
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

Subject: Dresden Station Units 2 and 3
Transmittal of Appendix R Related
Documents In Anticipation of Appendix R
Inspection
NRC Docket Nos. 50-237 and 50-249

Reference: Letter from J. J. Harrison to Cordell Reed
dated August 25, 1987.

Dear Mr. Davis:

In response to the above referenced letter, Commonwealth Edison is providing to you at this time, information which was requested by your staff in anticipation of the upcoming Appendix R audit at Dresden Station.

Table 1 summarizes the documentation enclosed with this letter and Enclosure 1 specifically lists this documentation. In order to assist your staff, as well as those individuals who will be involved in the Appendix R inspection, we have enclosed an executive summary of our fire protection program (Enclosure 2).

Also being provided is a set of the Dresden Station Interim Safe Shutdown Procedures. These procedures were in effect while the Station Appendix R modifications were being completed. All modification work was completed on August 31, 1987 and final procedures are in the process of being prepared. The procedures will be available at the time of the audit. The differences between the Interim and the Final Safe Shutdown Procedures will be clearly identified to your reviewers. Additionally, the Fire Hazards Report, Amendment 1, dated January 1986 and the Safe Shutdown Report, Amendment 1, dated January 1986 are also being provided for your use in preparation for the audit.

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Mr. A.B. Davis

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September 2, 1987

It should be noted, however, that Dresden Station does not have a reactor coolant pump. Therefore, we do not have need for a reactor coolant pump oil collection system. For these reasons, we are not providing the information as requested in Items Number 1 and 7.

Should any additional information or clarification be required, please contact this office.

Very truly yours,



I. M. Johnson
Nuclear Licensing Administrator

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Enclosures

cc: M. Grotenhuis - NRR (w/o Att.)
J. Holmes
Dresden Station Resident Inspector (w/o Att.)

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DRESDEN STATION
UNITS 2 & 3

TABLE 1

DESCRIPTION OF INFORMATION PROVIDED

- 1) Piping and Instrumentation Diagrams for Hot and Cold Safe Shutdown Systems (current):

M-12, Sh. 1&2	M-32	M-355
M-14	M-34	M-356
M-20	M-37	M-357, Sh. 1&2
M-21	M-39	M-359
M-22	M-41, Sh. 2	M-360, Sh. 1&2
M-23	M-50	M-361
M-25	M-51	M-363
M-26, Sh. 1&2	M-345, Sh. 1&2	M-365
M-28	M-347	M-374
M-29, Sh. 1&2	M-353	M-375, Sh. 1&2
M-30	M-354, Sh. 1&2	

- 2) The following plant layout and equipment locations drawings:
- o F-X-2 Drawings Cable routing and equipment locations for hot shutdown isolation condenser method
 - o F-X-3 Drawings Cable routing and equipment locations for hot shutdown HPCI/LPCI method
 - o F-X-4 Drawings Cable routing and equipment locations for cold shutdown cooling method
 - o F-X-5 Drawings Cable routing and equipment locations for cold Shutdown Division II LPCI method

The cable routings on these drawings reflect the condition of the station prior to the 1982 and 1984 Appendix R modifications. None of the cable reroutes or alternate feed modifications described in Section 6 of the Safe Shutdown Report have been included on these drawings.

- 3) The Interim Measures/Exemption Requests Report, provides the justification and basis for all exemptions from Appendix R. This includes cable separation drawings where necessary.
- 4) Current electrical schematics and single lines are being provided for all safe shutdown components. These schematics have been grouped by safe shutdown path. Simplified single line AC and DC diagrams are provided in Section 3 of the Safe Shutdown Report.

DRESDEN STATION
UNITS 2&3

TABLE 1 (Cont'd)

- 5) Plant layout drawings identifying fire suppression, fire detection, fire wrap and fire barriers (F-X-1). These drawings were revised to incorporate recent modification work.
- 6) Marked up plant layout drawings which identify general locations of emergency lighting units (F-X-6). These drawings currently being revised to incorporate recent modification work. The updated drawings will be available at the audit.
- 7) Plant operating procedures are included
- 8) Fire damage repair procedures are included
- 9) The updated SSD Report and Fire Hazards Analysis are included

ENCLOSURE 1

List of Documents

1. **P&ID's**

<u>Title</u>	<u># Unit 2</u>	<u># Unit 3</u>
Main Steam Piping	M-12 (Sh. 1&2), Rev. NN & XX	M-345 (Sh. 1&2) Rev. AE & NN
Reactor Feed Piping	M-14, Rev. KK	M-347, REV. AE
Reactor Building Cooling Water Piping	M-20, Rev. DD	M-353, Rev. AC
Turbine Building Cooling Water Piping	M-21, Rev. KK	M-354 (Sh. 1&2) Rev. AA & AE
Service Water Piping	M-22, Rev. AY	M-355, Rev. MW
Fire Protection Piping	M-23, (Sh. 1&2), Rev. C&B	M-375 (Sh. 1&2) Rev. B & D
Pressure Suppression	M-25, Rev. BB	M-356, Rev. AL
Nuclear Boiler And Reactor Recirculation Piping	M-26 (Sh. 1&2), Rev. AB & HH	M-357 (Sh. 1&2) Rev. AN & AE
Isolation Condenser Piping	M-28, Rev. KK	M-359, Rev. AF
Low Pressure Coolant Injection Piping	M-29 (Sh. 1&2), Rev. AT & P	M-360 (Sh. 1&2), Rev. UC & L
Reactor Water Cleanup Piping	M-30, Rev. WW	M-361, Rev. AF
Shutdown Reactor Cooling Piping	M-32, Rev. AE	M-363, Rev. W
Control Rod Drive Hydraulic Piping	M-34, Rev. AM	M-365, Rev. AAC
Turbine and Diesel Oil Piping	M-41 (Sh. 2), Rev. E	M-41 (Sh. 2), Rev. E
High Pressure Coolant Injection Piping	M-51, Rev. AE	M-374, Rev. AL

ENCLOSURE 1

List of Documents (Cont'd)

2. Plant layout, equipment locations, and cable routing drawings

F-2-2, Rev. C	F-8-5 (Sheet 2 of 2), Rev. B
F-2-3 (Sh. 1 of 2), Rev. C	F-9-2, Rev. A
F-2-3 (SH. 2 of 2), Rev. C	F-9-3, Rev. A
F-3-4, Rev. B	F-9-4, Rev. A
F-2-5, Rev. B	F-9-5, Rev. A
F-3-2, Rev. D	F-10-2, Rev. C
F-3-3, Rev. C	F-10-3, Rev. B
F-3-4, Rev. C	F-10-4, Rev. B
F-3-5, Rev. C	F-10-5, Rev. B
F-4-2, Rev. B	F-11-2, Rev. C
F-4-3, Rev. B	F-11-3, Rev. B
F-4-4, Rev. A	F-11-4, Rev. B
F-4-5, Rev. A	F-11-5, Rev. B
F-5-2, Rev. B	F-13-2, Rev. B
F-5-3, Rev. B	F-13-3, Rev. B
F-5-4, Rev. B	F-13-4, Rev. B
F-5-5, Rev. B	F-13-5, Rev. B
F-6-2, Rev. B	F-14-2, Rev. B
F-6-3, Rev. B	F-14-3, Rev. B
F-8-2 (Sheet 1 of 2), Rev. C	F-14-4, Rev. B
F-8-2 (Sheet 2 of 2), Rev. B	F-14-5, Rev. B
F-8-3, Rev. B	F-18-2, Rev. A
F-8-4 (Sheet 1 of 2), Rev. A	F-18-3, Rev. A
F-8-4 (Sheet 2 of 2), Rev. B	F-18-4, Rev. A
F-8-5 (Sheet 1 of 2), Rev. A	F-18-5, Rev. A

3. Appendix R Exemption Requests (one volume)

ENCLOSURE 1

List of Documents (Cont'd)

4. Single Lines and Schematics by SSD Path (see page 5 of this enclosure)

5. The following layout drawings identifying Fire Protection Features:

F-1, Rev. D
F-2-1, Rev. G
F-3-1, Rev. G
F-4-1, Rev. F
F-5-1, Rev. G
F-6-1, Rev. F
F-7-1, Rev. C
F-8-1, Rev. H
F-9-1, Rev. C
F-10-1, Rev. F
F-11-1, Rev. F
F-12-1, Rev. D
F-13-1, Rev. F
F-14-1, Rev. F
F-15-1, Rev. B
F-17-1, Rev. D
F-18-1, Rev. D
F-19-1, Rev. C
F-20-1, Rev. E
F-21-1, Rev. C
F-22-1, Rev. B
F-23-1, Rev. B
F-24-1, Rev. B
F-25-1, Rev. B

6. Emergency Lighting Drawings

F-201-6, Rev. D
F-202-6, Rev. D
F-203-6, Rev. D
F-204-6, Rev. C
F-205-6, Rev. D
F-206-6, Rev. C
F-207-6, Rev. C
F-208-6, Rev. C
F-209-6, Rev. C
F-210-6, Rev. C
F-211-6, Rev. C
F-212-6, Rev. C
F-213-6, Rev. C
F-214-6, Rev. C

ENCLOSURE 1

List of Documents (Cont'd)

- 7. Plant Operating Procedures
- 8. Fire Damage Repair Procedures
- 9A. Updated Fire Hazards Analysis (one volume)
- 9B. Updated Safe Shutdown Report (one volume)

BRESDEN STATION UNITS 2&3

FIRE PROTECTION PROGRAM

In addition, F-Drawings were developed to document and maintain various aspects of the Fire Protection Program as follows:

- F-X-1 (Enclosed) - Identify Suppression Detection, Fire Wrap, and Fire Barriers Locations (Current)
- F-X-2 through 5 (Enclosed) - Identify SSD Equipment and Cabling Locations (Record 1984)
- F-X-6 (Enclosed) - Emergency Lighting Drawings (Current)
- F-41 through 198 - Fire Rated Barrier Sections and Schedules (Current)
- F-250 through F-433 - Fire Suppression Piping Drawings (Current)

4.0 SAFE SHUTDOWN PROCEDURES

Safe Shutdown Procedures have been developed and are enclosed. Presently, these procedures are in revision to reflect revised manual actions. All changes will be clearly identified so as not to impede your review. The timeline for accomplishing manual actions is being reanalyzed. The reanalysis will be incorporated into the safe shutdown procedures prior to the audit.

ENCLOSURE 2

DRESDEN STATION
FIRE PROTECTION PROGRAM
EXECUTIVE SUMMARY

DRESDEN STATION
FIRE PROTECTION PROGRAM
EXECUTIVE SUMMARY

- 1.0 BACKGROUND
- 2.0 10CFR50, APPENDIX R COMPLIANCE
- 3.0 REEVALUATION OF CECO APPENDIX R COMPLIANCE
- 4.0 SAFE SHUTDOWN PROCEDURES
- 5.0 REFERENCES

FIRE PROTECTION PROGRAM

1.0 BACKGROUND

As part of the continuing NRC evaluation following the fire at the Browns Ferry Nuclear Station in March 1975, Commonwealth Edison Company (CECo) has outlined its fire protection program and features at Dresden Power Station in a number of documents submitted to the NRC between 1976 and the present.

The document entitled, "Information Relevant to Fire Protection Systems and Programs - Parts 1-2, April 1977," provided CECo's response to the NRC initial request for a comparison of the fire protection provisions of Dresden Station with the guidelines of Appendix A to BTP 9.5-1. This was CECo's first protection modifications. This Fire Hazards Analysis has been updated to reflect the current station configuration and is enclosed.

CECo also responded to NRC guidelines regarding nuclear power plant fire protection programs issued in the following documents:

1. Supplementary Guidance on Information Needed for Fire Protection Evaluation, September 30, 1976,
2. Sample Technical Specifications, May 12, 1977, and
3. Nuclear Plant Fire Protection Functional Responsibilities, Administrative Controls, and Quality Assurance, June 14, 1977.

Following the review of these CECo submittals and a plant inspection, the NRC staff docketed a Fire Protection Safety Evaluation Report (FPSE) for Dresden Units 2 and 3 in March 1978.

Implementation of these guidelines resulted in additional fire protection measures being incorporated to enhance the existing fire protection program and satisfy the NRC defense-in-depth philosophy. Many studies and much discussion were also associated with the subsequent NRC fire protection guidelines and requirements.

2.0 10CFR50, APPENDIX R COMPLIANCE/

The fire protection rule, Appendix R of 10CFR50, was issued on February 19, 1981, for Dresden Units 2 and 3. At that time, the shutdown analyses and subsequent related correspondence for Dresden Station was well underway and being reviewed by the NRC staff. CECo continued to provide

FIRE PROTECTION PROGRAM

the NRC staff with all necessary information for their review of the station's safe shutdown capability.

On July 1, 1982, CECO submitted the final response and position on Generic Letter 81-12 questions, Safe Shutdown Capability, Associated Circuits, and a listing of the exact shutdown methods and necessary safe shutdown modifications for Dresden Station. Submitted with this enclosure was Dresden Station's Fire Protection Associated Circuits Analysis and Modifications Report. The cable discrepancy report was revised and resubmitted August 16, 1982, as a supplement to the Modifications Report. The following modifications resulted from this analysis:

- o Alternate Feeds
- o Isolation Capability and Local Control
- o Reroutes
- o Fire Wraps

Enclosure D of the July 1, 1982 submittal included the first formal exemption request from the requirement of Appendix R Section III.G.3.b for fixed fire suppression. This request was made for thirteen fire zones having electrical equipment critical to the power distribution necessary for normal and emergency operation of safety-related equipment for Units 2 and 3 at Dresden Station. A formal exemption was granted from the requirements of Section III.G.3 on February 2, 1983.

By cover letter dated January 19, 1982, the NRC staff stated that they had completed the review of alternate shutdown capability was evaluated against the requirements of Sections III.G and III.L of Appendix R to 10CFR50. Based on this review, the NRC staff concluded that Dresden Station Units 2 and 3 was in compliance with Appendix R Items III.G.3 and III.L regarding safe shutdown in the event of a fire. A Safety Evaluation Report (SER) was written on this Appendix R review.

On the basis of this SER, CECO management was confident that the intent of Appendix R had been satisfied and continued working to implement the identified modifications in accordance with 10CFR50.48 (c) (4).

On October 19, 1983, Generic Letter 83-33, which reemphasized NRC positions on certain requirements of Appendix R, was transmitted to Dresden Station Units 2 and 3. As a result, CECO management decided to perform a reevaluation of the previous analysis to verify that misinterpretations did not exist.

FIRE PROTECTION PROGRAM

3.0 REEVALUATION OF CECO APPENDIX R COMPLIANCE**3.1 PURPOSE**

CECO management requested that a detailed, independent outside review of its entire fire protection program be conducted at Dresden Station. The study was to compare the criteria of Appendix R, with particular attention given to the latest NRC staff positions as presented in Generic Letter 83-33, with the previous Appendix R analysis.

3.2 REEVALUATION TEAM

In October 1983, CECO contracted the services of Professional Loss Control, Inc. (PLC) to conduct an in-depth reevaluation at Quad Cities Station. PLC was selected to perform this review because of their extensive involvement in all aspects of nuclear power plant fire protection. CECO also contracted the architectural engineering firm, Sargent & Lundy (S&L), to provide the technical support necessary for evaluation of mechanical, electrical, and nuclear system at the station. Furthermore, the Dresden Station Operating Staff was utilized in this reevaluation.

3.3 METHODOLOGY OF REEVALUATION

The Appendix R reevaluation included the detailed review of the fire protection program and safe shutdown analyses for Dresden Station Units 2 and 3. The fire protection program was reviewed and evaluated not only against Appendix R requirements but also include previous station commitments made in the:

- o Fire Hazards Analysis
- o Responses to Supplementary Guidance, August 12, 1977, Nuclear Plant Fire Protection Responsibilities, Administrative Controls and Quality Assurance
- o Fire Protection Safety Evaluation Report (FPSER)
- o Station Technical Specifications
- o NFPA Fire Codes (Design, installation and maintenance of fire protection systems)
- o Related Correspondence with the NRC

The adequacy of the 1982 safe shutdown analyses and related correspondence was verified and revalidated. These CECO responses were reviewed to the latest NRC staff positions

FIRE PROTECTION PROGRAM

and the criteria of Appendix R. Special attention was given to the issues addressed in Generic Letter 83-33.

A careful review was conducted against the guidance of Appendix R Sections III.G and III.L and Generic Letter 83-33. This review revalidated the Associated Circuits Analysis of June 1982 and expanded the analysis to demonstrate that a fire in one fire zone would not adversely affect the ability to shut down the plant event with alternate shutdown equipment located in an adjacent fire zone.

Documentation of the modifications and justification of Appendix R exemptions identified in this review are contained in the August 10, 1984 submittal, "Interim Compensatory Measures and Exemption Requests." These modifications included:

- o Fire Detection
- o Fire Suppression
- o Upgrades to Fire Barriers
- o Emergency Lighting

A revised Appendix R Safe Shutdown Report (Enclosure 1) was prepared which updated and replaced the Associated Circuits Analysis of June 1982. This report will document in detail the methodology and results of the reanalysis including hot shutdown, cold shutdown, potential adverse spurious operations, emergency lighting study, and the structural steel analysis. Documentation of the NFPA code study and the previous commitment review will be available for review.

The Safe Shutdown Report is being revised to incorporate recent modification work. In addition, several sections are being revised to clarify and substantiate Dresden Station Compliance with Appendix R. This includes clarification of several 1982 Safety Evaluation Report discrepancies. All changes to the SSD Report shall be clearly identified so as not to impede your review. None of the changes made will deviate from the current safe shutdown approach.

CECo personnel also recognized the need to consider compensatory measures when 10CFR50.48 (c) (4) could not be satisfied. Those proposed modifications which will not be completed according to the 10CFR50.48 schedule have been considered to determine the impact of a fire in the area before completion of the modification. Discussions are included in the August 10, 1984 submittal.