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Dalwyn R. Davidson
VICE PRESIDENT
SYSTEM ENGINEERING AND CONSTRUCTION

April 29, 1982

Mr. A. Schwencer
Chief, Licensing Branch No. 2
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Perry Nuclear Power Plant
Docket Nos. 50-440; 50-441
Response to Request for
Additional Information -
Fire Protection

Dear Mr. Schwencer:

This letter and its attachment is submitted to provide revised responses to the concerns identified in your request for Fire Protection.

It is our intention to incorporate these responses in a subsequent amendment to our Fire Protection Evaluation Report.

Very Truly Yours,

Dalwyn R. Davidson

Dalwyn R. Davidson
Vice President
System Engineering and Construction

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Question Topic 10:

Secondary power supplies for all fire detection systems.

Response

Section c-6a(6) of the SRP states that primary and secondary power supplies should satisfy the provisions of Section 2220 of NFPA 72D, and that this can be accomplished by using normal offsite power as the primary supply with a 4-hour battery supply as secondary supply; and by providing capability for manual connection to the Class 1E emergency power bus within 4 hours of loss of offsite power.

The normal and reserve battery chargers associated with the 125VDC power system, and the normal and alternate inputs for the 120 VAC UPS system are powered from normal 480V plant power with provision of being automatically transferred to Class 1E diesel generator power. This power distribution scheme concurs with Section 2223.b of NFPA 72D, with the exception that the 4-hour battery requirement is not met. The battery for the 125 VDC system is capable of a 15 minute duty cycle, and the battery for the UPS system is capable of a one hour duty cycle. However, on loss of offsite power, the fire suppression and detection loads are automatically transferred to diesel generator power. (The only exception to this is in the case of a LOCA. On LOCA initiation, the 4.16kV stub bus, which connects the fire suppression and detection loads to Class 1E power, is tripped. At a point in time after LOCA loads have been sequenced onto the diesel generators, the stub bus will be re-connected to Class 1E power. However, this would affect the power supplied to the fire suppression and detection loads only if a LOCA is simultaneous with a loss of offsite power condition. This is a double contingency, and does not have to be postulated.)

Furthermore, Section 2223.e of NFPA 72D states that if two or more engine driven generators are provided in addition to the primary power supply, a battery is not required. If a loss of offsite power would occur resulting in the need to transfer to Class 1E diesel-backed power, the power would be supplied by the Class 1E Division 2 diesel generator. However, if the Division

2 diesel generator is not available, the Division 1 diesel generator can be used to power the stub bus via the Class 1E 4.16kV system tie breakers. This cross tieing of the Division 1 diesel can not be accomplished within the 30 second limitation of Section 2223.e of NFPA 72D, but it can be accomplished within the 15 minute duty cycle of the 125VDC system battery. Although the specific details set forth in any one of the provisions of Section 2220 of NFPA 72D are not completely complied with, the reliability of the power sources used to power the fire suppression and detection equipment is considered to be comparable to that of a system meeting Section 2220 requirements.

Question Topic 26:

Comparison of PNPP's fire protection program to the guidance set forth in 10 CFR 50, Appendix R.

Response

Appendix R Section	PNPP Position
II.A, Fire Protection Program	Comply; see Perry Nuclear Power Plant Fire Protection Evaluation Report (PNPP-FPER) Pages 5-2 through 5-6. PNPP will follow the fire protection program outlined in the NRC staff supplemental guidance "Nuclear Plant Fire Protection Functional Responsibilities, Administrative Controls and Quality Assurance," dated August 29, 1977.
II.B, Fire Hazards Analysis	Comply; see PNPP-FPER Section 4.0. The results of PNPP's analysis to assure fire protection for safe shutdown capability, which were presented in an April 30, 1982 meeting with NRC(CHEB), will appear in the next amendment to the PNPP-FPER.
II.C Fire Protection Features	Comply; see PNPP-FPER and PNPP-FSAR Sections 9.5.1 and 13.1.
II.D Alternative or Dedicated Shutdown Capability	Comply; see written commitments in letter of April 1, 1982, to A. Schwencer from D. R. Davidson, as modified by verbal commitments made by CEI in an April 26, 1982, meeting with CHEB.

III.A Water Supplies for Fire Suppression Systems	Comply; Lake Erie is the source of fire protection water for PNPP. There are two structures which supply this water to the emergency service water pumphouse where the fire pumps are located. During normal operation, lake water will be supplied to the pumps through the intake tunnel. Should the intake tunnel become obstructed, an alternate source of this lake water supply is available through the discharge tunnel. For a detailed description of these dual intakes see FSAR section 3.8.4.1.9.
III.B Sectional Isolation Valves	Comply; All fire hydrants at PNPP are provided with a lateral which contains a key operated valve so that the hydrant may be isolated for maintenance and repair.
III.D Manual Fire Suppression	Will comply; Standpipe and hose systems at PNPP are so installed that at least one effective hose stream will be able to reach any location that contains or presents an exposure fire hazard to structures, systems, or components important to safety. Standpipe and hose stations are located inside of containment, but not inside drywell. However, adequate lengths of hose shall be provided to reach any location inside the dry well with an effective hose stream. The water supply for the standpipe and hose stations inside of containment is the normal fire service water supply.
III.E Hydrostatic Hose Tests	Will comply; fire hose will be hydrostatically tested per Appendix R criteria

III.F Automatic Fire Detection	Will comply or will submit request for exemption from Appendix R, Section III F, recommendations for automatic fire detection for specific areas based on results of the recently completed safe shutdown analysis. Automatic fire detection is currently provided based on the results of the fire hazards analysis presented in Section 4.0 of the PNPP-FPER.
III.G Fire Protection of Safe Shutdown Capability	Will comply or will justify deviations which will nonetheless provide equivalent fire protection for redundant cables and equipment as agreed to by NRC and CEI in an April 26 meeting on Section III.G compliance.
III.H Fire Brigade	Will comply.
III.I Fire Brigade Training	Will comply.
III.J. Emergency Lighting	Will comply.
III.K Administrative Controls	Will comply.
III.L Alternative and Dedicated Shutdown Capability	Compliance with this requirement was discussed in the April 26 meeting between NRC and CEI on the analysis performed to evaluate compliance of PNPP design with Section III.G criteria. Also, for the fire in the control room, loss of two of the four Reactor Protection System cabinets does not prevent loss of function of the manual SCRAM. Loss of two of these cabinets, although unlikely, is postulated because there is only 4.5 feet between the cabinets in each pair

III.L Alternative and Dedicated Shutdown Capability (Con't)	of cabinets. There is over 27 feet between each pair of cabinets. Additionally, upon evacuation of the control room due to fire, procedures will require verification that electrical power is removed from the scram inlet and discharge solenoids. Should a fire in the control room disable the diesel generator starting panel, operator action would be required at the diesel generator room to transfer control to the local panel. The control room circuits are isolated after control is transferred to the local panel.
III.M Fire Barrier Cable Penetration Seal Qualification	Will comply.
III.O. Oil Collection System for Reactor Recirculation Pump	Do not comply; a lube oil fire hazard for the reactor recirculation pumps does not require an oil collection system since the pump motor lube oil systems are contained within a metal motor housing and the pump is water lubricated and cooled; thus, an engineered oil leak collection system for the reactor recirculation pump is not necessary.