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MURRAY R. EDELMAN
VICE PRESIDENT
NUCLEAR

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Mr. B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Perry Nuclear Power Plant
Dockets No. 50-440; 50-441
Testing of Over Current
Protective Device Fuses

Dear Mr. Youngblood:

This letter provides information to address the Standard Technical Specification surveillance of Containment Penetration Conductor Overcurrent Protective Device fuses (4.8.4.2). This surveillance requirement is intended to demonstrate the operability of the fuses by specifying a non-destructive functional test which measures the resistance of the fuses to verify the resistances are within the manufacturer's design criteria.

The physical nature of fuses precludes the type of non-destructive testing required as well as eliminates the necessity of performance testing. Surveillance testing is appropriate for active overcurrent protective devices (such as circuit breakers) as they can potentially degrade due to such phenomena as corrosion or deformation of the components or "sticking" of the electrical contacts. Surveillances provide a real measure of assurance that these devices are operable. In contrast, a "calibrated" fuse is a passive component consisting merely of a conductor constructed of a material of known electrical properties which has been built to prescribed physical dimensions and sealed in a container. Therefore, because of the basic nature of their design, fuses are inherently simple, passive devices that are highly reliable; furthermore, if they do fail, it is not likely to be in the unsafe direction. This claim of high reliability is further substantiated by WASH-1400, October 1975, which determined that a conservative probability of a single fuse failure to open is 1E-5/demand. It must be recognized that when a single fuse is connected in series with a mechanical breaker (probability of failure to open of 4E-4/demand, Reference: IEEE 500-1977), the combined probability of failure to open for the circuit is 4E-9/demand. When two fuses protect the circuit, the probability is 1E-10/demand. Even taking into account the total number of circuits involved and the frequency of demands, the combined probability of occurence for a failure to protect a containment penetration on demand is so low as to preclude a necessity for routine fuse surveillance. Furthermore, CEI

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does not believe that there is an effective surveillance test that could be applied to fuses to verify the reliability of the fuse to protect primary containment penetrations. Furthermore, surveillance testing of fuses poses an additional administrative burden on plant operations without providing any added assurance of safe plant operation.

In summary CEI has concluded that no justification exists for implementing a requirement for surveillance of fuses and therefore, requests that this requirement be deleted from the Perry Technical Specifications.

If you have any questions, please feel free to call me.

Very truly yours,

Murray R. Edelman

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Vice President
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MRE:rjc

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