

PHILADELPHIA ELECTRIC COMPANY

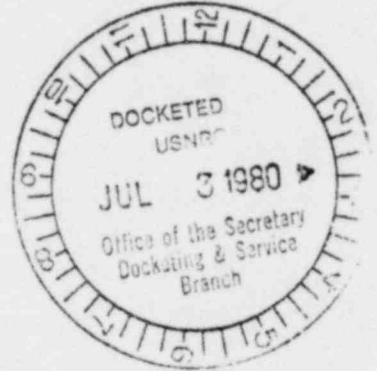
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DOCKET NUMBER
PROPOSED RULE PR-5.0
(45 FR 36082)

32

Mr. Samuel C. Chilk
Secretary of the Commission
Docketing and Service Branch
U.S. Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT: Proposed Amendments to 10 CFR Part 50
Relating to Fire Protection Programs
for Nuclear Power Facilities Operating
Prior to January 1, 1979 (45 F.R. 36082 et seq.)

Dear Mr. Chilk:

In response to the Commission's notice of rulemaking published in the Federal Register on May 29, 1980, there are enclosed for filing with the Commission, Philadelphia Electric Company's comments on the subject proposed amendments to 10 CFR Part 50. It should be noted that we concur in the comments on these proposed regulations which are being filed by Connors & Moore on behalf of the Company and several other licensees.

Very truly yours,

Attachment

Acknowledged by card 7/3/80 wah

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Philadelphia Electric Company Comments on Proposed Rules on
Fire Protection Programs for Nuclear Power Plants
Operating Prior to January 1, 1979

By a Notice published May 29, 1980, (45 FR 36083 et seq.) the United States Nuclear Regulatory Commission requested comments on a proposal to amend its regulations in 10 CFR Part 50 to include certain requirements relating to fire protection programs. The proposed amendments would add a new §50.48 and Appendix R to Part 50 which would require each nuclear power facility to have a fire protection plan which meets the requirements of Criterion 3 of Appendix A to Part 50, Appendix R to Part 50 and NRC Staff fire protection guidance.

Philadelphia Electric Company's (the Company) initial comment relates to the implementation schedule provided in proposed §50.48(c). As proposed, all fire protection modifications required to satisfy the NRC Staff must be completed by November 1, 1980, unless, for good cause shown, the Commission approves an extension. In the supplementary material provided with the proposed rule, the Commission has indicated that it anticipates approving few, if any, extensions (45 FR at 36083). The Company concurs with the "Separate Comments of Commissioners Hendrie and Kennedy" that the proposed implementation schedule is too short. The Company does not believe that the November 1, 1980, implementation provides sufficient time for the evaluation, design, procurement of material and installation required to implement many of the required changes.

Although the Commission indicates that it recognizes that the Staff has in some instances approved implementation schedules which extend beyond November 1, 1980, it indicates that these schedules will be reviewed again to determine if they are appropriate.

The Company recommends that the implementation schedule in proposed §50.48(c) be revised to provide that all required modifications be completed by November 1, 1981, unless good cause is shown for a later completion date or by the date specified in a plant specific fire protection evaluation completed by the regulatory Staff.

The remainder of the Company's comments relate to various provisions of proposed Appendix R to Part 50 and are as follows:

1. Paragraph II.E. (General Requirements) provides that the adequacy of fire protection for any particular plant area shall be determined by analysis of the effects of postulated exposure fires involving both in situ and transient combustibles on the ability to safely shutdown the reactor, or the ability to minimize and control the release of radioactivity to the environment. Separation of redundant systems and components by three-hour rated fire barriers or at least 50 feet both horizontal and vertical of clear air space shall be deemed adequate, but that lesser ratings or distances shall be justified by analysis or test. The Company believes that the requirements for analysis or test are too broad and that additional separation criteria should be identified since the stated separation requirement of 50 feet of clear air space is almost impossible to achieve indoors.
2. Paragraph III.F. (Specific Requirements) provides that automatic fire detection systems shall be installed in all areas of the plant that contain combustibles and safe shutdown or safety-related systems or components. The Company believes that other factors should be considered such as redundancy, in situ combustibles, occupation, and normal surveillance, all taken together, for determining the need for automatic fire detection systems. Further, automatic detection would not seem to be appropriate for an area which contains minute quantities of combustibles. It is recommended that Paragraph III.F. be revised to provide that automatic fire detection systems shall be installed in all areas of the plant that contain combustibles in sufficient quantities so as to present a fire hazard that may jeopardize the operability of safe shutdown or safety related systems or components.
3. Paragraph III.G. and III.L. (Specific Requirements) deal with requirements relating to the protection of safe shutdown capability and alternate shutdown capability. It appears that there is some confusion between these two sections which could be remedied by defining normal and alternate shutdown systems, or by establishing criteria for achieving cold shutdown.

For most plants, the routine shutdown method consists of conventional plant equipment (condenser, circulating water system, etc.). This equipment and its controls are located throughout the plant. Since this is balance of plant equipment, there is not any attempt to separate control cables or equipment. Therefore, if this routine shutdown

method is considered "normal", almost all the plant areas would require fixed suppression systems.

It is recommended that Paragraph III.G. be revised to require that at least one method of achieving hot and cold shutdown should be available for each fire zone in the plant. In order to take credit for a method in a fire zone, that method shall meet the criteria outlined in Paragraph III.L. (capable of being powered from onsite supplies, not subject to fire damage, etc.). Allowance for remote manual operations should be taken if the analysis demonstrates that the operations can be realistically performed. The criteria for the suppression systems for these areas follows:

- a. All operations for safe shutdown performed from control room and access for manual fire fighting is good. - No fixed suppression system required.
 - b. All operations for safe shutdown performed from control room and access for manual fire fighting is poor - manually initiated, fixed suppression system required.
 - c. Some local operations required for safe shutdown and access for manual fire fighting is good - manually initiated, fixed suppression system required.
 - d. Some local operations required for safe shutdown and access for manual fire fighting is poor - automatically initiated, fixed suppression system required.
4. Paragraph III.H. (Specific Requirements) prohibits the "shift supervisor" from being a member of the fire brigade. It would seem that this prohibition is intended to apply only to the senior shift supervisor. At the Company's nuclear facility, the assistant shift supervisor is the fire brigade leader. Direction of the fire brigade by a knowledgeable supervisor is desirable to ensure that radiological conditions, and safe shutdown procedures are considered during the fire fighting effort.
5. Paragraph III.M. (Specific Requirements) requires that fire barriers (floors, walls, ceilings, or other enclosures) separating (1) fire areas or (2) equipment or components of redundant systems important to safe shutdown within an area shall have a fire rating of three hours unless a lower rating is justified by the fire hazard analysis. It also provides structural steel forming a part of or supporting such fire barriers shall have fire resistance equivalent to that required of the barrier. Such fire resistance shall be provided by protection equivalent to metal lath and plaster covering.

It is our recommendation that this section be revised to permit an evaluation of structural steel protection requirements on a case by case basis. In most areas of the plant, temperatures due to in situ combustibles will not reach a level that would degrade the structural steel members.

6. Paragraph III.N., Item 5 requires that the fire barrier 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.

It has been the Company's experience that most test labs do not consider the differential pressure in the stated direction. They use a slight negative differential pressure in the test chamber to prevent smoke from entering the lab. Up until the point of breachment, the differential pressure has absolutely no effect. Cabling will not propagate a fire and the seal materials themselves are manufactured to be fire retardant. The normal pressure differential of 0.25 to 0.50 inches of water will not degrade the integrity of the seal, and therefore will not provide a motive force for flame propagation. It does not appear to be necessary to design for the simultaneous accident of a fire and high energy line break that results in a 0.5 to 1.0 psi differential pressure.

7. The test acceptance criteria provided in Paragraph III.N.8.c provides that the test is acceptable if the fire barrier remains intact and does not allow projection of water beyond the unexposed surface during the hose stream test. The use of the terminology "projection of water" is unclear and we believe it should be clarified or explained further.
8. Paragraph III.P. requires the Reactor Coolant Pump lubrication system to be protected by either an oil collection system or an automatic fire suppression system. It is our recommendation that this requirement be eliminated for facilities with inerted containments, provided an early warning detection system and fire fighting capabilities utilizing the fire water system are provided for protection of the Reactor Coolant Pump areas in the drywell during plant shutdowns. Periods during which the drywell is deinerted and inaccessible are short in duration and therefore does not present a credible fire hazard.
9. Paragraph III.O. requires that areas protected by automatic total flooding gas suppression systems have electrically supervised self-closing fire doors.

It is recommended that this requirement be revised to provide areas protected by automatic total flooding systems shall have electrically supervised self-closing fire doors with the exception that normally closed, water tight doors (air lock type) provided for flood protection, need not have a self-closing feature.

10. Paragraph III.Q. requires that associated circuits shall be electrically isolated from safety equipment so that hot shorts, open circuits, or shorts to ground in the associated circuit will not prevent operation of the safety equipment. If associated circuits are not known to be so electrically isolated, they shall be considered safe shutdown circuits. The separation and barriers between trays and conduits containing associated circuits of one safe shutdown division and trays and conduits containing associated circuits or safe shutdown cables from the redundant division shall be such that a postulated fire involving associated circuits will not prevent safe shutdown.

The concept of associated circuits, as outlined in proposed Paragraph Q, was introduced by Reg. Guide 1.75 in 1974, restated in 1975, and again in 1978. There is no applicability date associated with the initial issuance of the Reg. Guide, however, revisions 1 and 2 only apply to plants issued construction permits post February 1, 1974. Therefore, the Section Q requirements for associated circuits should not apply to facilities for which construction permits were issued prior to February 1, 1974.