10CFR50.90

PHILADELPHIA ELECTRIC COMPANY

NUCLEAR GROUP HEADQUARTERS

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January 8, 1993

Docket Nos. 50-352
50-353
License Nos. NPF-39
NPF-85

NUCLEAR SERVICES DEPARTMENT

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Subject: Limerick Generating Station, Units 1 and 2
Technical Specifications Change Request No. 92-18-0

Gentlemen:

Philadelphia Electric Company is submitting Technical Specifications Change Request (TSCR) No. 92-18-0, in accordance with 10CFR50.90, requesting an amendment to the Technical Specifications (TS) (Appendix A) of Operating License Nos. NPF-39 and NPF-85. Information supporting this Change Request is contained in Attachment 1 to this letter, and the proposed replacement pages are contained in Attachment 2.

This submittal requests changes to TS Sections 4.3.7.9.1 and 4.3.7.9.2, and Bases Section 3/4.3.7.9 to reduce the frequency of testing of certain fire detection instrumentation in accordance with the guidance provided in the 1990 Edition of the National Fire Protection Association (NFPA) Standards.

If you have any questions or require additional information, please do not hesitate to contact us.

Very truly yours,

G. J. Beck, Manager
Licensing Section

Attachments

cc: T. T. Martin, Administrator, Region I, USNRC w/ attachments
T. J. Kenny, USNRC Senior Resident Inspector, LGS
w/ attachments
W. P. Dornsife, Director, PA Bureau of Radiological Protection
w/ attachments

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COMMONWEALTH OF PENNSYLVANIA :
: ss.
COUNTY OF CHESTER :

D. R. Helwig, being first duly sworn, deposes and says:

That he is Vice President of Philadelphia Electric Company, the Applicant herein; that he has read the foregoing Application for Amendment of Facility Operating License Nos. NPF-39 and NPF-85 (Technical Specifications Change Request No. 92-18-0) to reduce the frequency of testing of fire detection instrumentation, and knows the contents thereof; and that the statements and matters set forth therein are true and correct to the best of his knowledge, information and belief.

D R Helwig

Vice President

Subscribed and sworn to
before me this 8th day
of January, 1993.

Catherine A. Mendez

NOTARIAL SEAL
CATHERINE A. MENDEZ, Notary Public
Tredyffrin Twp., Chester County
My Commission Expires Sept. 4, 1993

ATTACHMENT 1

LIMERICK GENERATING STATION
Units 1 and 2

Docket Nos. 50-352
50-353

License Nos. NPF-39
NPF-85

TECHNICAL SPECIFICATIONS CHANGE REQUEST

"Reduced Testing Frequency for Fire Detection Instrumentation"

Supporting Information for Changes - 5 pages

Philadelphia Electric Company (PECo), Licensee under Facility Operating Licenses NPF-39 and NPF-85 for Limerick Generating Station (LGS), Units 1 and 2, respectively, requests that the Technical Specifications (TS) contained in Appendix A of the Operating Licenses be amended as proposed herein to reduce the frequency of testing of certain fire detection instrumentation. The proposed changes are indicated by a vertical bar in the margin of TS pages 3/4 3-92, new page 3/4 3-92a, and Bases page B 3/4 3-6 for both LGS Unit 1 and Unit 2 TS, and are contained in Attachment 2.

We request that the changes proposed herein be effective within two (2) weeks issuance of the Amendments.

This Change Request provides a discussion and description of the proposed TS changes, a safety assessment of the proposed TS changes, information supporting a finding of No Significant Hazards Consideration, and information supporting an Environmental Assessment.

Discussion and Description of the Proposed Changes

Fire and smoke monitoring, detection, and alarm are accomplished through the installation of smoke detectors and/or heat detectors in areas where fire potential exists. At LGS, the fire and smoke detection systems for annunciation are separate from fire detection systems for actuation of fire extinguishing systems. The fire and smoke detection system is also electrically supervised to detect circuit breaks, ground faults, and power failure. All fire or trouble alarms register on the audible/visual annunciator on the fire protection panels in the Main Control Room (MCR). The fire and smoke detection system conforms to the guidance provided in National Fire Protection Association (NFPA) Standard 72D (1979), "Proprietary Protective Signaling Systems," with some exceptions and clarifications as described in Section 9.5.1.2.9 of the LGS Updated Final Safety Analysis Report (UFSAR). NFPA 72D (1979) refers to NFPA Standard 72E (1978), "Automatic Fire Detectors," for testing of the fire detection system.

TS Section 4.3.7.9.1 currently requires that all smoke detectors be demonstrated operable at least once per six (6) months. Due to the large number of fire detectors at LGS, Units 1 and 2, testing at this frequency requires a significant amount of time, effort, and resources, including personnel that are dedicated to performing fire detector tests. TS Section 4.3.7.9.1 is consistent with NPFA 72E (1978) which recommends that smoke detectors be tested semiannually (i.e., every 6 months). However, this recommendation was changed in 1987 such that the current edition (i.e., 1990) of NFPA 72E recommends that smoke detectors be functionally tested annually (i.e., every 12 months). The NFPA Technical Committee's basis for making this change was that testing every six (6) months had "no sound technical basis," and that

annual testing reflected the common practice which was found to be acceptable within the industry.

Accordingly, we propose to change the frequency of functional testing of the smoke detectors as specified in TS Section 4.3.7.9.1 from "at least once per 6 months" to "at least once per 12 months" to make the LGS TS consistent with the 1990 Edition of NFPA 72E and thereby reduce the impact of this testing on personnel resources.

TS Section 4.3.7.9.1 also currently requires that all heat detectors be demonstrated operable at least once per six (6) months. Due to the large number of fire detectors at LGS, Units 1 and 2, this testing requires a significant amount of time, effort, and resources, including personnel that are dedicated to performing fire detector tests. In contrast to the LGS TS requirement, NFPA 72E (1978) recommends that at least one detector in each signal-initiating circuit be tested semiannually and that different detectors be selected for each test. This recommendation was changed in 1987 such that the 1990 Edition of NFPA 72E includes an additional recommendation that all heat detectors be tested within a five (5) year period. These recommendations ensure that each signal-initiating circuit is capable of performing its intended function on a six month basis by ensuring that one or more of the heat detectors in each circuit is operable. At LGS, testing of a heat detector includes testing of the entire signal-initiating circuit. Signal-initiating circuits at LGS are specific to individual fire areas, i.e., a signal-initiating circuit does not cross fire area boundaries but initiates the fire suppression system that is installed in the fire area in which the circuit is located. These recommendations also ensure that all heat detectors in signal-initiating circuits are tested over a five (5) year period.

Accordingly, we propose to change TS Section 4.3.7.9.1 such that a sample of heat detectors (i.e., at least one or more) be tested every six (6) months, that different detectors be selected for each test, and that all heat detectors be tested within a five (5) year period. This change is being proposed to make the LGS TS consistent with the 1990 Edition of NFPA 72E and thereby reduce the impact of this testing on personnel resources.

The surveillance testing interval for all other types of fire detectors remains unchanged (i.e., every six (6) months) by the proposed TS changes.

TS Section 4.3.7.9.2 currently requires that the supervisory circuits associated with detector alarms be demonstrated operable at least once per six months. This testing also requires a significant amount of time, effort, and resources. This requirement is based on the frequency as specified in the NRC's Standard Technical Specifications that were in effect at the time of development of the LGS TS (i.e., NUREG-0123, 1980). In contrast, NFPA 72D (1979) does not provide recommendations on

testing of the supervisory circuits for the detector alarms. A recommendation for functionally testing these supervisory circuits on an annual basis (i.e., every 12 months) was added to the 1990 Edition of NFPA 72, "Protective Signaling Systems" which is a consolidation of NFPA Standards 72A, "Local Protective Signaling Systems," 72B, "Auxiliary Protective Signaling Systems," 72C, "Remote Station Protective Signaling Systems," 72D, and 72F, "Emergency Voice/Alarm Communication Systems."

Accordingly, we propose to change the frequency of testing of the supervisory circuits for the detector alarms as specified in TS Section 4.3.7.9.2 from "at least once per 6 months" to "at least once per 12 months" to make the LGS TS consistent with the 1990 Edition of NFPA 72 and thereby reduce the impact of this testing on personnel resources.

Safety Assessment

The proposed changes involve changing only the surveillance test interval for certain fire detection instrumentation. The fire detection system is a non-safety related system required to provide early detection of a fire to protect safety related equipment in the area of the fire. Failure of the fire detection system does not affect any transient or accident evaluation, including the LGS fire safe shutdown analyses. In addition, no design requirements are being changed and the fire detection system design performance would not be degraded as a result of the proposed changes.

The LGS Fire Protection Program uses the defense-in-depth approach aimed at preventing fires and minimizing the effect of any fires that occur. This is accomplished through separation of redundant safety systems, an integrated network of components and equipment providing detection and suppression of fires, concepts of design and layout, administrative controls and procedures, and personnel training. The Fire Protection Program also uses the defense-in-depth approach to assure that a fire will not prevent the performance of necessary safe shutdown functions and will not cause an undue risk to the health and safety of the public. The Fire Protection Program is formulated such that failure of an active or passive component of one fire protection feature is backed-up by another entirely different fire protection feature (e.g., fire rated assemblies, sprinklers, detection, etc.), and therefore, multiple fire protection features would not likely be impacted simultaneously by a common time-based failure nor would the overall effectiveness of the program be significantly compromised by a single component failure.

Based on the above discussion, we have concluded that the proposed TS change, to reduce the frequency of testing of certain fire detection instrumentation, does not impact plant safety. A review of the fire detection instrumentation surveillance test history demonstrated that there is no evidence of any failures which would invalidate the above conclusion.

Information Supporting a Finding of No Significant Hazards Consideration

We have concluded that the proposed changes to the LGS TS, to reduce the frequency of testing of certain fire detection instrumentation, do not constitute a Significant Hazards Consideration. In support of this determination, an evaluation of each of the three standards set forth in 10CFR50.92 is provided below.

1. The proposed TS changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

   The proposed TS changes involve a change in the surveillance testing interval for certain fire detection instrumentation to make the test interval consistent with the current (i.e., 1990) edition of the applicable NFPA Standards. The proposed TS changes do not result in any physical changes to the plant nor do they impact any design or functional requirements of the plant systems. The proposed TS changes do not degrade the performance or increase the challenges of any safety-related systems assumed to function in the accident analysis. Additionally, no accidents previously evaluated have as their initiators anything related to the change in frequency of surveillance testing. Also, the proposed TS changes do not affect the availability of equipment or systems required to mitigate the consequences of an accident because of the equipment redundancy required by the LGS Fire Protection Program and the fact that the conclusions of the LGS fire safe shutdown analyses remain unchanged. Furthermore, a review of the fire detection instrumentation surveillance test history determined that there is no evidence of any failures that would invalidate the above conclusions. Therefore, the proposed TS changes do not increase the probability or consequences of an accident previously evaluated.

2. The proposed TS changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

   The proposed TS changes involve a change in the surveillance testing interval for certain fire detection instrumentation to make the test interval consistent with the current (i.e., 1990) edition of the applicable NFPA Standards. The proposed TS changes do not introduce nor increase the number of failure mechanisms of a new or different type than those previously evaluated since no physical changes are being made to the facility, no design requirements are being changed, and the system design performance is not degraded. In addition, the frequency of testing is not an accident initiator. Also, the conclusions of the LGS fire safe shutdown analyses remain valid. Therefore, changing the frequency of testing does not

create a new or different accident. Furthermore, a review of the fire detection instrumentation surveillance test history determined that there is no evidence of any failures that would invalidate the above conclusions. Therefore, the proposed TS changes do not create the possibility of a new or different kind of accident from any previously evaluated.

3. The proposed TS changes do not involve a significant reduction in a margin of safety.

Although the proposed TS changes will result in an increase in the interval between surveillance tests, the increased interval is consistent with the guidance provided in the current edition of the applicable NFPA Standards. The proposed TS changes do not impact plant safety based on the redundancy of equipment required by the LGS Fire Protection Program and the fact that the conclusions of the LGS fire safe shutdown analyses remain unchanged. A review of the fire detection instrumentation surveillance test history determined that there is no evidence of any failures that would invalidate the above conclusions. Therefore, the proposed TS changes do not reduce the margin of safety.

Information Supporting an Environmental Assessment

An environmental assessment is not required for the changes proposed by this Change Request because the requested changes conform to the criteria for "actions eligible for categorical exclusion," as specified in 10CFR51.22(c)(9). The requested changes will have no impact on the environment. The requested changes do not involve a significant hazards consideration as discussed in the preceding section. The requested changes do not involve a significant change in the types or significant increase in the amounts of any effluent that may be released offsite. In addition, the proposed changes do not involve a significant increase in individual or cumulative occupational radiation exposure.

Conclusion

The Plant Operations Review Committee and the Nuclear Review Board have reviewed these proposed changes to the TS and have concluded that they do not involve an unreviewed safety question, or a significant hazards consideration, and will not endanger the health and safety of the public.