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April 3, 1985

Director, Office of Nuclear Reactor Regulation  
Attention: Document Control Desk  
Office of Nuclear Reactor Regulation  
Washington, D.C. 20555

Gentlemen:

Subject: Generic Letter 85-01  
Fire Protection Policy Steering Committee Report

Federal Register, Volume 50, Number 10 dated January 15, 1985 requested comments on the NRC Fire Protection Policy Steering Committee Report on fire protection policy recommendations. The package consists of a draft generic letter with several attachments. The attachments provide revised interpretations of Appendix R requirements, proposed enforcement action guidance, a proposed fire protection license condition and NRC responses to industry questions. The purpose of this letter is to provide Southern California Edison's (SCE's) comments regarding Generic Letter 85-01.

A review of the history of NRC fire protection regulations shows the everchanging and confusing nature of the requirements, some of which specifically did not apply to certain licensees. On March 22, 1975, a major fire damaging safe shutdown equipment occurred at the Browns Ferry Nuclear Station. After the Browns Ferry fire, the NRC Staff concluded that cost effective fire protection measures should be instituted to significantly decrease the frequency and severity of nuclear plant fires. The NRC consequently developed technical guidance and issued those guidelines as Branch Technical Position (BTP) APCS 9.5-1, "Guidelines for Fire Protection for Nuclear Power Plants." This guidance did not apply to plants operating at that time. Guidance to operating plants was provided later in Appendix A to BTP APCS 9.5-1 which was issued in August 1976. Acceptable alternative fire protection guidelines were identified in this appendix to provide adequate and acceptable fire protection without significant impact on plant design, construction and operation. In 1977, each licensee provided to the NRC a Fire Protection Program Evaluation which also included a Fire Hazards Analysis. By

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the end of 1978, the staff had essentially completed its review of licensee's Fire Protection Program Evaluations. Although many fire protection items were resolved and agreements included in Fire Protection Safety Evaluation Reports, fifteen fire protection issues remained unresolved with a number of licensees.

To establish a definitive resolution of these fifteen issues in a manner consistent with the general guidelines in Appendix A to the BTP, the Commission issued a proposed fire protection rule and 10 CFR 50 Appendix R, which presented minimum fire protection requirements for the fifteen unresolved items. After analyzing comments on the rule, the Commission determined that three of the fifteen items were of such safety significance that they should apply to all plants, including those for which alternative fire protection actions had been approved previously by the staff. On October 27, 1980, the Commission approved 10 CFR 50.48 and Appendix R to 10 CFR 50, to set forth the Commission's requirements for resolving the fifteen issues at all plants licensed prior to January 1, 1979 and for backfitting Sections III.G, III..J and III.O of Appendix R. The Commission also approved the staff's requirement that all plants to receive their operating license after January 1, 1979 also satisfy the requirements of Sections III.G, III.J and III.O and that a fire protection license condition be established.

Numerous letters have been issued by the NRC since 10 CFR 50.48 and Appendix R became effective on February 17, 1981. These letters provide clarifying information on the staff fire protection requirements. Generic Letters 81-12 and 83-33 were issued February 20, 1982 and October 19, 1983, respectively. The most recent of these letters was issued January 9, 1985 to All Power Reactor Licensees and All Applicants For Power Reactor Licensees. This letter is Generic Letter 85-01.

The perceived purpose of issuing generic guidance (such as Generic Letters 81-12, 83-33, and 85-01) has been to provide information to industry as to methods acceptable to the NRC staff in complying with the requirements of Appendix R. Although that is still true, it can now apparently be anticipated that, not only are the requirements imposed on licensees by NRC regulations subject to inspection and potential enforcement action, but implementation of "guidance" provided in NRC generic letters will also be subject to NRC inspection and potential enforcement action. The NRC responses to questions provided with the generic letter include acceptance criteria for meeting Appendix R requirements which go beyond the criteria provided in previous guidance (e.g., Generic Letters 81-12, 83-33 and, in some instances, regional fire protection workshops, etc.). The requirements which go beyond previously issued generic letters (e.g., Generic Letters 81-12 and 83-33) are tabulated in Enclosure 1.

SCE also believes that implementation of Generic Letter 85-01 guidance which goes beyond previously issued NRC requirements will not significantly enhance overall plant safety. Examples of Generic Letter 85-01 guidance not significantly enhancing overall plant safety include diagnostic instrumentation requirements for the alternate shutdown capability and requirements for acceptable cable tray support fire protection.

Prior to Appendix R and subsequent generic guidance, the instrumentation circuits provided at the alternate shutdown station(s) were considered to be the minimum set of instrumentation required for safe shutdown outside the control room. However, Generic Letter 85-01 sets the precedent that diagnostic instrumentation be provided such that, when utilizing the alternative shutdown capability, proper actuation and subsequent operation of all safe shutdown and support system components be remotely verifiable. Were a licensee to complete its Appendix R analysis including the associated circuits analysis, the licensee would possess the capability to determine fire-related circuit and component losses for a fire in any given plant area. Hence, plant operators would have the information available to make them aware of which circuits' operation would be questionable and be able to take alternative methods, if necessary, to achieve safe shutdown. Thus, establishing a minimum set of diagnostic instrumentation does not enhance overall plant safety beyond that currently achievable.

Generic Letter 85-01 guidance dictates that cable tray supports should be protected, in spite of the presence of an installed sprinkler system, to preclude the loss of an installed cable tray fire-rated barrier. This cable tray barrier should be installed to meet the one-hour rating requirement specified in Appendix R, Part III.G.2(c). However, in instances where III.G.2(b) is utilized to satisfy Appendix R separation requirements, no cable tray support protection other than area-wide suppression capability is required. The guidance promulgated in Generic Letter 85-01 reflects that little, if any, credit is taken for the ability of an installed sprinkler system not only to suppress the fire in the area, but also to provide the necessary cooling for cable tray supports. This guidance appears to be inconsistent with the literal separation requirements governed by Appendix R, Part III.G.2, and also does not significantly increase the existing level of safety.

SCE is concerned that issuance of Generic Letter 85-01 represents yet another round of NRC interpretations of Appendix R (fire protection) requirements. The NRC maintains that fire protection (specifically Appendix R) requirements have not changed; however, each generic guidance document issued has resulted in additional "requirements" acceptable to the NRC to comply with Appendix R. Typically, prior to Generic Letter 85-01, NRC Appendix R guidance has been issued in a manner which attempts to provide further clarification thereby illustrating acceptable methods for implementing Appendix R requirements. This guidance was, by no means, the only acceptable method to achieve Appendix R compliance nor did it establish any form of technical acceptance criteria. Generic Letter 85-01, however, provides additional clarification as in previously issued generic guidance, yet attempts to incorporate the requirements promulgated therein into the Office of Inspection and Enforcement Inspection Module TI-2515/62 to be utilized as the technical acceptance criteria for Appendix R inspection compliance. SCE believes that this method of establishing technical acceptance criteria is

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inappropriate and is also concerned that further guidance promulgating additional fire protection requirements may be forthcoming.

If you have any questions, please contact me.

Very truly yours,



Enclosure

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FIRE PROTECTION GUIDANCE: GENERIC LETTER 85-01  
REQUIREMENTS BEYOND PREVIOUSLY ISSUED GENERIC LETTERS

GENERIC LETTER  
 85-01 TOPIC

REQUIREMENT

GENERAL

On Post-1979 (operating license) plants, 10 CFR 50 Appendix R is only enforceable through the license condition.

Post-1979 (operating license) plants are subject to:

- GDC-3
- 10 CFR 50.48(a) and (e)
- Guidelines identified in the footnotes to 10 CFR 50.48(a)
- Guideline documents issued after January 1, 1979
- Commitments made to the requirements of Appendix R or specific sections such as III.G, III.J and III.O.
- BTP CMEB 9.5-1

Deviations from the requirements of Section III.G, III.J and III.O should be identified and justified in the (FSAR or) FHA and the deviation would probably require a license amendment (if meeting III.G, III.J and III.O are required to be met by license condition) to change the license condition.

NTOL's (Post-1979 plants) will be subject to Appendix R inspection and audit; the fire protection inspections will be against the particular license conditions. The license condition must identify deviations from Appendix R.

Failure to have an evaluation available for an area where compliance with Appendix R is not readily demonstrated will be taken as prima facie evidence that the area does not comply with NRC requirements.

GENERIC LETTER  
85-01 TOPIC

REQUIREMENT

I. UPDATED FHA  
DOCUMENTATION

The following information must be provided:

- Description of systems (safety and non-safety related) occupying the fire areas which could provide core cooling,
- Description of plant areas that contain radioactive material and for each fire area:
  - Identify safety-related equipment and associated cabling,
  - Provide design criteria for fire protection of area, and
  - Provide design criteria for protection of such equipment against inadvertent operation, careless operation or rupture of extinguishing systems.

II. FIRE BARRIERS

Unsealed opening(s) allowed in a fire area boundary or barrier separating redundant shutdown divisions should not permit flame, radiant energy, smoke and hot gases to pass through the barrier and cause damage to the redundant division. Adequacy of existing protection should be assessed.

Acceptance of unprotected openings depends upon:

- quantity and nature of combustibles (both sides),
- location of openings in relation to ceiling (walls),
- location, vulnerability and importance of shutdown system, and
- compensating fire protection.

If a wall, floor or ceiling assembly contains major unprotected openings, (hatchways) then plant locations on either side of such a barrier must be considered as part of a single fire area.

GENERIC LETTER  
85-01 TOPIC

REQUIREMENT

II. FIRE BARRIERS  
(Cont.)

An exemption is required if fire doors installed in a fire barrier used to satisfy Section III.G.2 are modified such that the labeled rating no longer applies.

Conduit and cable tray enclosure materials accepted by NRC as a 1 hour barrier prior to Appendix R (e.g., some Kaowool and 3M materials) and already installed need not be replaced even though they may not have met the 325<sup>0</sup>F criteria (maximum temperature attained by unexposed cable surface under ASTM E-119 test conditions - NFPA 251). However, "new" material should meet the 325<sup>0</sup>F criterion. Justification of temperatures which exceed 325<sup>0</sup>F is required.

Where exact replication of a tested configuration cannot be achieved, the field installation should meet all of the following criteria:

- continuity of the fire barrier material is maintained,
- thickness of the barrier is maintained,
- nature of the support assembly is unchanged (from the tested configuration),
- application of the fire barrier is unchanged, and
- the configuration has been reviewed by a qualified FPE and found to provide an equivalent level of protection.

Cable tray supports should be protected, regardless of whether there is a sprinkler system. Supports need not be protected if:

- the qualification tests were performed on wrapped cable trays with unprotected supports and the supports are shown to be adequate, or

GENERIC LETTER  
85-01 TOPIC

REQUIREMENT

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GENERIC LETTER  
85-01 TOPIC

REQUIREMENT

II. FIRE BARRIERS  
(Cont.)

- a structural analysis is performed which demonstrates that failure of the unprotected supports will not cause a loss of the cable tray fire barrier.

Note: qualification tests and their applicability or structural evaluation should be documented.

III. ASSOCIATED  
CIRCUITS

Appendix R circuit failure modes are hot shorts, open circuits and shorts to ground. It is not postulated that the fire would eventually clear the hot short.

High impedance faults should be considered for all associated circuits located in the fire area of concern. Clearing such faults on non-essential circuits may be accomplished by manual breaker trips governed by written procedures.

Circuit breaker coordination studies should be current with the last circuit modification made (on-going through 10 CFR 50.59).

Note: Refer also to Control Room Fires, Category VI.

IV. LOSS OF OFFSITE  
POWER CRITERIA

A loss of offsite power shall be assumed for a fire in any fire area concurrent with the following:

- The safe shutdown capability should not be adversely affected by any one spurious actuation or signal resulting from a fire in any plant area, and

GENERIC LETTER  
85-01 TOPIC

REQUIREMENT

IV. LOSS OF OFFSITE  
POWER CRITERIA (Cont.)

- The safe shutdown capability should not be adversely affected by a fire in any plant area which results in the loss of all automatic function (signals, logic) from the circuits located in the area in conjunction with one worst case spurious actuation or signal resulting from the fire, and

V. ALTERNATE  
SHUTDOWN  
CAPABILITY (ASC)

Alternate shutdown capability (ASC) must meet the requirements of III.G.3 and III.L for post-1979 plants.

VI. CONTROL ROOM  
FIRES

Alternative or dedicated shutdown capability and its associated circuits for the control room should be independent of cables, systems and components in the control room fire area.

Assumptions are:

- reactor is tripped in the control room (any additional control room action deemed necessary would have to be justified under the exemption process), and
- offsite power is lost as well as automatic starting of the onsite AC generators and the automatic function of valves and pumps whose control circuits could be affected by a control room fire.

GENERIC LETTER  
85-01 TOPIC

REQUIREMENT

VI. CONTROL ROOM  
FIRES (Cont.)

The analysis should demonstrate that capability exists to manually achieve safe shutdown conditions from outside the control room by:

- restoring AC power to designated pumps,
- assuring that valve lineups are correct,
- assuming that any malfunctions of valves that permit the loss of reactor coolant can be corrected before unrestorable conditions occur.

VII. PROCEDURES

The only requirement for post-fire operating procedures is for those areas where alternative shutdown is required.

After the control room fire, operators can return to the control room when:

- the fire has been extinguished and so verified by appropriate personnel,
- control room has been deemed habitable by appropriate personnel
- damage assessed, corrective action taken (as necessary) to assure safety, control and information systems functional and shift supervisor has authorized return of plant control to control room and
- turnover procedures (transfer of control to the control room) have been completed.

GENERIC LETTER  
85-01 TOPIC

REQUIREMENT

VIII. GENERAL FIRE  
PROTECTION  
DESIGN CRITERIA

The fire protection systems should retain their original design capability for:

- natural phenomena of less severity and greater frequency than the most severe natural phenomena, and
- potential man-made site-related events.

IX. QUALITY ASSURANCE

Quality assurance applicable to fire protection systems is that required by GDC-1 of Appendix A to 10 CFR 50.

X. BTP CMEB 9.5-1

Post-1979 (operating license) plants are subject to BTP CMEB 9.5-1.