



South Carolina Electric & Gas Company  
P.O. Box 764  
Columbia, SC 29218  
(803) 748-3513

Dan A. Neuman  
Vice President  
Nuclear Operations

April 23, 1986

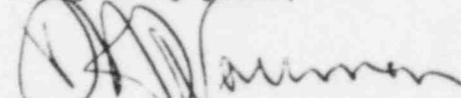
Mr. Harold R. Denton  
Director, Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D. C. 20555

SUBJECT: V. C. Summer Nuclear Station  
Docket No. 50/395  
Operating License No. NPF-12  
Appendix R Reanalysis

Dear Mr. Denton:

On April 2, 1986 a meeting was held in Bethesda between South Carolina Electric and Gas Company (SCE&G) and the Staff to clarify details related to three deviation requests submitted in our May 29, 1985 letter to your office and to further discuss our position on natural circulation monitoring as originally detailed in our submittal of November 1, 1985. Attachment I to this letter provides the additional information requested by the staff regarding the deviations to III.G.2 separation in Fire Areas AB-1 and IB-25. In addition, as a result of SCE&G's continuing Appendix R Reanalysis, an additional deviation relating to III.G.2 separation has been identified in Fire Area IB-25 and is described in detail in Attachment II.

Very truly yours,



D. A. Neuman

TJK/HID/DAN:csw  
Attachments

pc: O. W. Dixon, Jr./T. C. Nichols, Jr.	J. H. Barker
E. H. Crews, Jr.	C. L. Ligon (NSRC)
E. C. Roberts	R. M. Campbell
W. A. Williams, Jr.	K. E. Nodland
J. Nelson Grace	G. O. Percival
Group Managers	R. L. Prevatte
O. S. Bradham	J. B. Knotts, Jr.
D. R. Moore	H. G. Shealy
C. A. Price	NPCF
	File 15.1360

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## ATTACHMENT I

Additional Information Regarding Deviation Requests Submitted in our May 29, 1985 Letter:

### Fire Area AB-1

In our May 29, 1985 letter, SCE&G requested a deviation from the requirements in Section III.G.2 of Appendix R for Fire Area AB-1. The information below is provided to clarify our justification for this deviation:

The "B" train cable in Fire Zone AB-1.8 \* (Elev. 397) is separated from redundant "A" train cables and raceways in Fire Zones AB-1.10, 1.18, 1.19 (Elev's 412, 436 & 463) by a horizontal distance ranging from 5 to 20 feet. The floor slab of Elev. 412 provides vertical separation of these redundant cables. All cable tray conduit and pipe penetrations located in the 412 floor are sealed in this area of concern. Two hatch covers are located in this area for access to the Containment Isolation Valve Chambers. The hatch covers are constructed of concrete and are installed for the full thickness of the 412 floor. The closest unsealed openings are two small pipe and conduit penetrations located 30 feet from the "B" train cable and an open equipment hatch located approximately 50 feet from the "B" train cable. A reinforced concrete wall with unprotected openings is located on Elev. 397 and separates the "B" train cable from these unprotected floor openings. The fire loading in Fire Zone AB-1.8 (Elev. 397) is 12,700 BTU/FT<sup>2</sup> and is 29,000 BTU/FT<sup>2</sup> in Fire Zone AB-1.10 (Elev. 412). Combustibles within these zones consist of cable insulation which qualifies as IEEE-383. Intervening combustibles are negligible and consist of isolated cable runs.

In conclusion, it is SCE&G's position based on the relatively large horizontal separation between cables and the unprotected floor openings, the presence of sealed openings within the 20 ft. range, the low fire loading and negligible intervening combustibles and the presence of an automatic detection system, that the level of fire protection is equivalent to the III.G.2 requirements.

\*NOTE: Fire Zone AB-1.8 was listed as AB-1.9 in the May 29, 1985 letter in error.

### Fire Area IB-25

In our May 29, 1985 letter, SCE&G requested a deviation from the requirements in Section III.G.2 of Appendix R for Fire Area IB-25.1 This deviation involved an electrical cable chase located on Elev. 412 and designated as Fire Zone IB-25.10. A further review of this Fire Zone indicates that it can be upgraded to a Fire Area without further modification. The cable chase is constructed of reinforced concrete satisfying the requirements for a 3 hour rated fire barrier. All penetrations are sealed to provide a fire resistance rating equal to that of the barrier. SCE&G requests that this deviation request be withdrawn since full compliance with Appendix R, Section III.G.2.a will be provided.

## ATTACHMENT II

Title: Fire Area IB-25, Deviation to III.G.2 Separation Requirements

Area Description:

Fire Area IB-25 is the general floor area of the Intermediate Building on elevation 412' and 436' and the east and west penetration access areas. This area is comprised of nine separate fire zones. Walls surrounding this area are of reinforced concrete and satisfy the requirements for three hour rated barriers where they separate this area from other fire areas. Floors and ceilings are also of reinforced concrete but do not satisfy the requirements for a three hour rated barrier due to unprotected or protected steel supports with a one hour fire resistance rating. Floor/ceiling openings between elevation 412' and 436' are unsealed in order to provide venting in case of a high energy line rupture. A more detailed description of this fire area is contained in Section 4.4 of the Fire Protection Evaluation Report.

Affected Safe Shutdown Capability:

Redundant trains for the Service Water Booster Pumps are located in this area.

Fire Area Analysis:

Fire Area IB-25 contains redundant trains for the Service Water Booster Pumps. Train "A" equipment and cables are located in Fire Zones IB-25.1. (elevation 412) and IB-25.6 (elevation 436). Train "B" equipment and cables are located in Fire Zone IB-25.1. Separation equivalent to III.G.2 requirements is provided on Elev. 412 (Fire Zone IB-25.1). The "A" train power cables are wrapped with 3 layers of Kaowool which provides an equivalent 1 hour rated barrier and the "A" train pump is separated from redundant "B" train cables above by an "M" board fire barrier as discussed in our letters of September 20, 1985 and December 30, 1985. However, the "A" train power cables in Fire Zone IB-25.6 are unprotected. The floor/ceiling between Fire Zones IB-25.1 and IB-25.6 is constructed of reinforced concrete which would satisfy the requirements for a 3 hour rated fire barrier if not for unprotected floor/ceiling openings. Automatic detection and suppression systems are provided in Fire Zone IB-25.1. Fire Zone IB-25.6 contains automatic detection only.

Deviation:

Fire Area IB-25 does not comply with the requirements in Section III.G.2 of Appendix R to 10CFR50, in that cable of one redundant train is not enclosed in a 1 hour fire barrier throughout the Fire Area.

## Justification for the Deviation

The train "A" power cables in Fire Zone IB-25.6 are separated from the redundant train "B" cables and equipment in Fire Zones IB-25.1 on the elevation below by a reinforced concrete floor/ceiling which would satisfy the requirements for a 3 hour rated fire barrier if not for unprotected openings. The openings in the 436 floor slab consist of conduit and pipe penetrations, a personnel access hatch and an open equipment hatch. The conduit penetrations are located against the north wall of the 480V Switchgear Room. Since these penetrations include the "A" train cables of concern and are located almost directly above the redundant "B" train cables, SCE&G proposes to seal these penetrations in order to prevent fire propagation through these openings. The pipe penetrations are located to the north of the train "A" conduits by approximately 20 feet. These openings are of a size and location which would not present a significant pathway for propagation to the train "A" cables. The personnel access hatch cover is constructed of steel and is located approximately 10 feet from the "A" train conduit. Although it is not a rated fire assembly, it is of substantial construction and will prevent fire propagation. The equipment hatch is located against the east wall of the Switchgear Room and is 15 feet from the "A" train conduits. The "A" train conduits are shielded from direct fire exposure from the hatch by the northeast corner of the Switchgear Room. The fire loading in Fire Zones IB-25.1 and IB-25.6 are 43,000 BTU/Ft<sup>2</sup> and 20,600 BTU/Ft<sup>2</sup>, respectively.

In addition to this passive protection, active fire protection is provided by an automatic fire detection and suppression system located in Fire Zone IB-25.1. Automatic detection and manual hose stations are provided in Fire Zone IB-25.6. The pre-fire plan for Fire Zone IB-25.1 will indicate the manning of these hose stations to prevent propagation to IB-25.6. These systems provide a reasonable assurance that a fire would be detected and controlled in its initial stage before significant damage or propagation occurred.

In conclusion, it is SCE&G's position that the existing and proposed fire protection features, both active and passive in nature for Fire Area IB-25, provide a high level of assurance that at least one train of safe shutdown equipment will remain free of fire damage. These fire protection features provide a level of fire protection equivalent to that of III.G.2. Further modification required to meet III.G.2 would not enhance fire protection safety.