



MISSISSIPPI POWER & LIGHT COMPANY

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P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

August 21, 1981

NUCLEAR PRODUCTION DEPARTMENT

U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D.C. 20555

Attention: Mr. Harold R. Denton, Director

Dear Mr. Denton:

SUBJECT: Grand Gulf Nuclear Station
Units 1 and 2
Docket Nos. 50-416 and 50-417
File 0260/8010/0862
Transmittal of Proposed FSAR
Changes and Responses to
NRC Questions Related to
Fire Protection
AECM-81/309



In response to your request for additional information, Mississippi Power & Light Company is submitting the enclosed materials updating information pertaining to fire protection.

The attached information was informally requested by Mr. G. Harrison (reviewer in fire protection area in CEB) in discussions with members of our staff on August 12, 1981. This information represents changes to the Grand Gulf Nuclear Station Final Safety Analysis Report (FSAR).

These proposed FSAR changes will be incorporated into a forthcoming amendment to the FSAR. If you have any questions or require further information, please contact this office.

Yours truly,

L. F. Dale
Manager of Nuclear Services

RFP/JGC/JDR:lm

Attachments (See Next Page)

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- Attachments:
1. Question and Response 13.9
 2. Discussion Item - Routing of Redundant Safe-Shutdown-Related Raceways through Safety-Related Equipment Areas
 3. Discussion Item - Sprinkler Coverage

cc: Mr. N. L. Stampley
Mr. G. B. Taylor
Mr. R. B. McGehee
Mr. T. B. Conner

Mr. Victor Stello, Jr., Director
Office of Inspection & Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

013.9 Table 9A-1, Sheet 6, Item D.1(j)

Substantiate the fire resistance capability of the following items as they pertain to safety-related areas or high hazard areas by verifying that their construction is in accordance with a particular design that has been fire tested. Identify the design, the test method used and the acceptance criteria:

- (1) Rated fire barriers, including floor and ceiling construction and their supports;
- (2) Fire dampers and fire doors, as well as how they are installed in the ventilation ducts that penetrate rated fire barriers of safety-related areas; and
- (3) Fire barrier penetration seals around ducts, pipes, cables, cable trays and in other openings (e.g., concrete joints sealers and fillers). Verify that all seals are of the thickness specified in the tests, and that cables and cable trays are supported in a manner similar to supporting arrangements used in any tests.

RESPONSE

- (1) In safety-related or high hazard areas, floor and ceiling structures and supports designated as rated fire barriers are composed of normal weight concrete over galvanized metal decking formwork. The minimum concrete slab thickness is 4.5 inches for a two-hour rated fire barrier and 5.25 inches for a three-hour rated fire barrier; this is in accordance with UL design numbers D902 and D916. Moreover, in the questioned areas, the fire rated walls are constructed in accordance with the Standard Building Code and UL design numbers U904 and U905.
- (2) The response to this portion of the question is given in revised Table 9A-1, item D.1.j and Figure 9A-53.
- (3) All electrical, piping, tubing, and duct penetrations through fire rated floors and walls are filled to a depth which meets the thicknesses verified by actual fire tests which were witnessed and certified by an independent fire testing agency. Fire barrier closures are designed to withstand a three-hour fire and are tested in accordance with American Nuclear Insurers and Mutual Atomic Energy Reinsurance Pool standards. Additional information pertaining to fire barrier and penetration details are provided in Table 13.9-1.

During the cable penetration tests, cables were tied to the cable trays with the same ties that are used in Grand Gulf. An assortment of ties were used so that flexibility in procurement would be guaranteed. The cable tray supports utilized for the test were external to the test furnace being mounted on the unexposed side of the test slabs. This mounting simulated actual field installations in that the exposed sections of tray would be held in place during an actual fire by the unexposed sections of the tray system.

Concrete joint sealers and fillers were subjected to 3-hour fire and hose-stream tests in accordance with the ASTM E 119 test setup. The tests were performed by an independent laboratory using materials and construction details representative of those used at Grand Gulf. Figure 013.9-1 shows the concrete slab detail used with four joints completely penetrating the slab. One side of the slab was exposed to a 3-hour fire in accordance with ASTM E 119. Temperature rise on the unexposed surface was within the requirements of ANI. No flame-through occurred, and no water penetrated the joints during the hose-stream tests; therefore, all ANI requirements were satisfied.

TABLE 13.9-1

Summary of Penetration Fire Stop Details

<u>Electrical</u>			
<u>Penetration Detail Number</u>	<u>Detail Owner or Designer</u>	<u>Fire Stop Supplier/ Installer</u>	<u>Test Report Number and Date</u>
31 32 35 41A	B	TS	FMR Test Report J.1, 4C3Q9.AC Design FC-2700 12/14/78 FMR Test Report J.I. 1A5Q6. AC 5/10/78
33 34	B	B	FMR Test Report J.I. 1A5Q6. AC Design FC-258 5/10/78
36	TS	TS	TS-TP-0068 2/27/81 Rev. 4/23/81

The above penetration details have been approved by American Nuclear Insurers for use at Grand Gulf. Documentation is not provided herein but it is available upon request.

Notes:

1. B - Bechtel; TS - Tech-Sil; FMR - Factory Mutual Research, ANI - American Nuclear Insurers
2. Nonsymmetrical Fire Stop is tested in both directions.
3. The above summary does not include fire damper applications which are handled separately by UL testing and qualification.

TABLE 13.9-1 (Continued)
Summary of Penetration Fire Stop Details

Penetration Detail Number	<u>Mechanical</u>			Test Report Number and Date
	Detail Owner or Designer	Fire Stop Supplier/ Installer		
23A	B	B		Not Required for grout
23B	TS	TS		TS-TP-0050-A 8/29/80
23D	TS	TS		TS-TP-0014 7/12/78
23E				TS-TP-0050-D 8/29/80 (see Note 2)
23J				
23N	TS	TS		TS-TP-0062-A 12/16/80
23P	TS	TS		TS-TP-0048-D 9/26/80 TS-TP-0048-C 8/26/80
23Q	TS	TS		TS-TP-0057-A 11/28/80 TS-TP-0057-B 11/28/80
23R	TS	TS		TS-TP-0008-A 7/19/78

The above penetration details have been approved by American Nuclear Insurers for use at Grand Gulf. Documentation is not provided herein but it is available upon request.

Notes:

1. B - Bechtel; TS - Tech-Sil; FMR - Factory Mutual Research, ANI - American Nuclear Insurers
2. Nonsymmetrical Fire Stop is tested in both directions.
3. The above summary does not include fire damper applications which are handled separately by UL testing and qualification.

Discussion Item: Routing of redundant safe-shutdown-related raceways through safety-related equipment areas.

Response: As discussed August 12, 1981, and referenced in the revised response to question 13.38 submitted by FSAR Amendment 46, June, 1981, there are no redundant safe-shutdown-related raceways located in the HVAC Equipment Room, El. 133 feet, Room OC302. In addition, only Division II safe-shutdown cables are located in this area. As concluded in the discussion, no additional information is required on this item.

Discussion Item: Sprinkler Coverage

Response: As discussed on August 12, 1981, and described in subsection 7.2.1.1 of Appendix 9A and shown in Figure 9A-54, sprinkler coverage is provided for all portions of the Auxiliary Building floor area between column lines J.5 and the East wall and 10.5 and the North wall on elevations 93 feet and 103 feet. The sprinklers located above the metal grate floor on elevation 103 feet provide protection to the floor area beneath at the 93 feet elevation. As concluded in the discussion, additional sprinklers below the metal grate floor are not necessary and no additional information is required on this item.