

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-5001

SHIELDS L. DALTROFF  
VICE PRESIDENT  
ELECTRIC PRODUCTION

July 22, 1985

Docket Nos. 50-277  
50-278

Mr. John F. Stolz, Chief  
Operating Reactors Branch #4  
Division of Licensing  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

SUBJECT: Peach Bottom Atomic Power Station  
Control Room Upgrade - Carpet

Dear Mr. Stolz:

This letter provides information requested by the NRC Peach Bottom Project Manager and technical staff during a June 26, 1985 teleconference with the Engineer-In-Charge of our Licensing Section and members of our Mechanical Engineering Division. We plan to install carpet over the existing vinyl-asbestos tile floor in the control room and auxiliary office areas. The primary reason for this change is to reduce overall background noise in the interest of improving communications between control room personnel. Additionally, this change will improve the appearance of the room and overall comfort for the operating crew.

The NRC Regulatory Guide 1.120, Revision 1, specifies that material used in the construction of nuclear power plants must have a flame spread of 25 or less and a smoke development of 50 or less per ASTM E-84. Prior to 1981, the Steiner Tunnel Test (ASTM E-84) was used to measure flame spread and optical smoke density for carpet. The test results were classified in three ways:

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Class A - Flame spread 0-25  
Smoke development 0-450

Class B - Flame spread 26-75  
Smoke development 0-450

Class C - Flame spread 76-200  
Smoke development 0-450

Since 1981, carpet is no longer tested under ASTM E-84. Flame criteria for carpet have been developed using the "Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Source" (ASTM E-648). The test results are classified in two ways:

Class I - Minimum Critical Radiant Flux  
 $\leq 0.45$  watts/cm<sup>2</sup>

Class II - Minimum Critical Radiant Flux  
 $\leq 0.22$  watts/cm<sup>2</sup>

The smoke development criteria for carpet are cited under ASTM E-662, "Test for Specific Optical Density of Smoke Generated by Solid Materials".

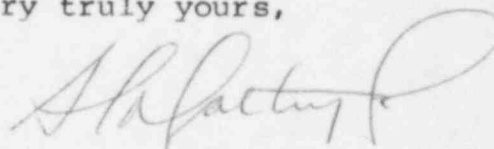
Philadelphia Electric Company was concerned that the carpet might represent a significant fire hazard from the standpoint of overall flammability and the potential for smoke production, if ignited. We have obtained the results of fire tests on the proposed carpet, which demonstrate that it represents no greater fire hazard than the previously approved vinyl-asbestos tile that it will cover. Specifically, the Critical Radiant Flux was determined to be 1.01 watts per square centimeter as determined by the test method in ASTM E-648, which enables the carpet to be considered as a Class I interior finish. The smoke development rating of the carpet was determined to be less than 250, as determined by the test method in ASTM E-662. This compares to a flaming smoke development of 325 for vinyl-asbestos tile using the same test. We conclude that the installation of the carpet will not significantly decrease the level of fire safety in the control room and, therefore, represents an acceptable deviation from Section G.7.b of BTP CMEB 9.5.-1.

The addition of carpet in the Control Room represents a human factors enhancement. Control Rooms in other nuclear facilities have been carpeted resulting in favorable comments from operators. As noted at a September 26, 1984, Fire Protection Subcommittee ACRS meeting, the NRC has allowed carpet in control rooms as a human factors enhancement.

Given that the carpet will improve communications between control room personnel, as well as the appearance and comfort of the control room, and does not significantly increase the fire hazard in the room, we are expediting completion of this change. If you differ with this assessment, please contact us. We expect that the carpet will be installed during August, 1985.

Should you require additional information, please do not hesitate to contact us.

Very truly yours,



cc: T. P. Johnson, Resident Site Inspector