BROOKHAVEN NATIONAL LABORATORY
ASSOCIATED UNIVERSITIES, INC.
Upton, New York 11973
Department of Nuclear Energy
(516) 345-2144

July 14, 1980

Mr. Robert L. Ferguson
Chemical Engineering
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

RE: Pilgrim Nuclear Power Plant, Fire Protection Review,
Items 3.1.6 and 3.2.4.

Dear Bob:

Attached is the Brookhaven National Laboratory recommendations for Item 3.1.6/3.2.4, Cable Combustibility.

You will note that this is in the new format as outlined by Mr. Benaroya in our conversation of July 10, 1980.

Respectfully yours,

Robert E. Hall

Robert E. Hall, Group Leader
Reactor Engineering Analysis

REH:EAM:sd
attachment
cc.: V. Benaroya
W. Kato wo/att.
M. Levine "
E. MacDougall

A006
S
1/1

8009090 569F

Pilgrim Nuclear Power Plant

Fire Protection Review

SER Supplement Evaluations

SER ITEM 3.1.6/3.2.4 - CABLE COMBUSTIBILITY

Recommendations:

We recommend that the staff accept the licensee's submittal as far as coating the PVC cables. However, we recommend that the staff require the licensee to coat the Okonite cables and the Kerite cables.

SER Item 3.1.6 - Fire Retardant Cable Coating and Fire Stops

The SER states:

"PVC jacketed special control and instrumentation cables will be covered with a flame retardant coating, except where these cables are installed in enclosed trays.

Fire stops will be installed in accordance with BECo Construction Standard E-347, Sheets S48, 51, 52, 54, and 57.

Fire stops will be installed every 20 feet in vertical trays. In addition, fire breaks will be installed in various trays as required by the fire hazard analysis. Computer instrument cabling in totally enclosed trays will be provided with fire stops (over a 3-foot length) every 20 feet."

SER Item 3.2.4 - Cable Combustibility

The SER states:

"Documentary evidence will be submitted for those cables which will not be covered with a flame retardant coating to demonstrate that they are capable of passing IEEE Std. 383 flame test."

By letter dated March 5, 1980, the licensee indicated that all PVC insulated or jacketed cables in open trays were coated with Flamemastic 77 no later than March 1, 1980. The licensee also stated that all other electrical cables are capable of passing the IEEE Standard 383 flame test. In support of this later statement the licensee submitted copies of letters from the Okonite Company (October 25, 1979) and the Kerite Company (January 24, 1977).

The letter from the Okonite Company refers to a three page list of cables which are capable of passing the flame test portion of IEEE Standard 383. The list, which had been sent to the licensee as an attachment to the Okonite letter, was not a part of the licensee's March 5, 1980 submittal. Without this attachment it is difficult to understand completely the exact meaning of the Okonite lette . Since we don't know what cables were involved, we feel that all the Okonite Company cables be protected with flame retardant coating.

The letter from Kerite states that the cables which have passed the IEEE Standard 383 flame test are similar to the cables installed in Pilgrim, but not identical and that tests of the installed cables may not produce identical results. A recent report from the Electric Power Research Institute (EPRI) (EPRI-NP-1200 "Categorization of Cable Flammability, Part I: Laboratory Evaluation of Cable Flammability Parameters" October, 1979) points out that the fire performance of generically similar cable types may vary because of differences in their exact composition. Because there is no assurance that the installed cables will pass the IEEE flame test, we recommend that the staff request the licensee to protect these cables with flame retardant coatings.

The remaining parts of item 3.1.6 were not addressed and remain open.