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OCT 22 1985

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EEICB/subj A1051

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MEMORANDUM FOR: Themis P. Speis, Director
Division of Safety Technology
Office of Nuclear Reactor Regulation

FROM: Guy A. Arlotto, Director
Division of Engineering Technology
Office of Nuclear Regulatory Research

SUBJECT: EQUIPMENT QUALIFICATION RESEARCH TEST WITH ANACONDA FLAME
GUARD FR-EP CLASS 1E MULTICONDUCTOR CABLE

In 1983 the NRC Qualification Testing Evaluation Research Program at Sandia National Laboratories used Anaconda Flame Guard Qualified Cable in a research test using a qualification test sequence involving the simultaneous thermal and radiation aging and simultaneous accident radiation and LOCA simulation testing of single and multiple conductor ethylene propylene rubber insulated cables purchased from several cable manufacturers as Class 1E qualified cable. The EPR D (Anaconda Flame Guard) multiconductor cable exhibited large leakage currents after 15 days into the post-LOCA-transient period and the insulation was found in the post-test examination to have cracked and peeled away exposing the bare wires. The test results were reported in NUREG/CR-3538, "The Effect of LOCA Simulation Procedures on Ethylene Propylene Rubber's Mechanical and Electrical Properties." Saturated steam was used in replicating the accident temperature profile in these initial tests. The Equipment Qualification Branch of the Office of Nuclear Regulatory Research requested that the EPR D be retested using superheated steam in the test. This superheated steam test was recently completed and the Anaconda Flame Guard qualified cable exhibited as before high current leakage after 19 to 21 days into the post-LOCA-transient period and the cable insulation was found to have split exposing the bare conductors. A Quick Look Report, dated October 17, 1985, reporting the preliminary results of the Superheated-Steam Cable Test is enclosed. My staff and that of the contractor (Sandia National Laboratories) are available to assist your office as needed in evaluating the test results for safety significance.

Original signed by G. A. Arlotto

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Guy A. Arlotto, Director
Division of Engineering Technology
Office of Nuclear Regulatory Research

Enclosure: As stated

OFFICE	EEICB:DET	EEICB:DET	DET				
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