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AUTH.NAME AUTHOR AFFILIATION
MANGAN,C.V. Niagara Mohawk Power Corp.
RECIP.NAME RECIPIENT AFFILIATION
VASSALLO,D.B. Operating Reactors Branch 2

SUBJECT: Forwards results of analysis & fault test re RIS Co SC-326 isolators used on safety-related inputs to process computer. Inputs used by SPDS. Test results satisfactory.

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NIAGARA MOHAWK POWER CORPORATION/300 ERIE BOULEVARD WEST, SYRACUSE, N.Y. 13202/TELEPHONE (315) 474-1511

August 29, 1985

Director of Nuclear Reactor Regulation
Attention: Mr. Domenic B. Vassallo, Chief
Operating Reactors Branch No. 2
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Nine Mile Point Unit 1
Docket No. 50-220
DPR-63

Dear Mr. Vassallo:

In response to a request made by members of your staff, an analysis and fault test was conducted for the isolators used on safety-related inputs to the process computer. These inputs are then used by our Safety Parameter Display System. The test results were satisfactory. Details of the methodology and results are attached.

Sincerely,

NIAGARA MOHAWK POWER CORPORATION

C. V. Mangan
Senior Vice President

DW:svm

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ATTACHMENT

TEST RESULTS FOR RIS CO.

SC-326 ISOLATORS

An analysis and fault test on RIS Co. SC-326 Isolators was conducted at Nine Mile Point Unit 1. These isolators are being used on safety-related inputs to the process computer, which in turn is needed for the Safety Parameter Display System. Previous testing of the isolators had been completed, but the concern expressed dealt specifically with the coverage of maximum credible faults in the transverse mode. It was conveyed that a test was needed in which the maximum credible voltage (from a source inside the cabinets where the isolators are located) is applied to the output of the isolators, line-to-line. No pertubations should carry through to the input side (which have the safety system signal inputs). It was agreed this voltage would not be greater than 115 VAC (15-20 amps), which corresponds to a common wall outlet source. The results would demonstrate that the maximum credible fault in the transverse mode will not significantly affect safety-related signals.

The test was conducted on a typical RIS Co. SC-326 Isolator. The procedure used was designed to comply with the details of your staff's request. As previously agreed upon, a 120 VAC (through a 20A breaker) fault was utilized. The first step of the test insured that the isolator was maintaining isolation. After this was confirmed, the fault was applied. The isolator was damaged as a result of combustion, but maintained isolation. Damage was limited to the output stage. This test result concurs with the manufacturer's analysis. The manufacturer states that for application of low power voltage from one output terminal to the other (transmode), component damage in the output stage would occur, but no defect would be seen in the input stage or on the circuits connected to the input terminals.

The isolator test conducted at Nine Mile Point Unit 1 showed positive results according to criteria previously established. After applying a maximum credible fault in the transverse mode, the isolators while damaged maintained isolation.