

May 11, 1987

Docket No. 99900100

Limitorque Corporation  
ATTN: Mr. P. McQuillan  
Quality Assurance Administrator  
5114 Woodall Road  
Lynchburg, Virginia 24502

Gentlemen:

Subject: DRAFT INFORMATION NOTICE ON MARATHON 1600 TERMINAL BLOCKS

The Nuclear Regulatory Commission is in the process of preparing an information notice entitled "Environmental Qualification Test Failures of Marathon 1600 Terminal Blocks."

A copy of the latest draft of this information notice is enclosed for your review and comment.

Comments received by May 20, 1987, particularly those dealing with the facts presented in the information notice, will be considered in the final revision.

Sincerely,

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Carl H. Berlinger, Chief  
Generic Communications Branch  
Division of Operational Events Assessment  
Office of Nuclear Reactor Regulation

Enclosure:  
Information Notice

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NAME	:SAlexander	:UPotapovs	:EMerschhoff	:CHBerlinger	:	:	:
DATE	:4/29/87	:4/30/87	:4/30/87	:4/29/87	:	:	:

CMB

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

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Sincerely,

A handwritten signature in cursive script that reads "Carl H. Berlinger".

Carl H. Berlinger, Chief  
Generic Communications Branch  
Division of Operational Events Assessment  
Office of Nuclear Reactor Regulation

Enclosure:  
Information Notice

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT  
WASHINGTON, D.C. 20555

April XX, 1987

NRR INFORMATION NOTICE NO. 87-XX: ENVIRONMENTAL QUALIFICATION TEST FAILURES  
OF MARATHON 1600 TERMINAL BLOCKS

Addressees:

All nuclear power reactor facilities holding an operating license or a construction permit.

Purpose:

To alert addressees to environmental qualification (EQ) test failures involving Marathon 1600 and 1500 terminal blocks (TBs) and to point out certain limitations in TB testing reported in Limitorque Qualification Test Report No. B0119.

It is expected that recipients will review the information for applicability to their facilities and consider actions, if appropriate, to preclude similar problems. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

In September 1986, Pennsylvania Power and Light Company (PP&L) EQ personnel became aware that the 1600s (and 1500s) had failed in Marathon sponsored EQ tests at Wyle Laboratories (Wyle Report No. 45603-1 dated February 1982). The failure mode was shorting with the attendant inability to maintain the TBs energized at 528 Vac. The samples had been thermally aged for 444 hours at 248°F. Failure occurred during loss-of-coolant-accident (LOCA) simulation at 365°F when the samples were energized with 528 Vac for an operability test using a motor external to the test chamber as a load.

PP&L-sponsored testing of the 1600s was completed recently at Wyle for Susquehanna's drywell environment. These samples had been thermally aged for 185 hours at 248°F. Three Marathon 1600s were mounted in a spray-tight enclosure in the test chamber. Failure occurred on one of the three samples in this test during the LOCA exposure at 360°F when the samples were energized with 528 Vac for the first operability test following spray initiation. The failure mode was a short circuit between the terminals of two phases and short circuits from at least one terminal to ground on the mounting panel of the test enclosure across the insulated base of the TB.

Limatorque Report No. B0119 claims qualification for five types of TBs used in Limatorque valve actuators for in-containment pressurized water reactor (PWR) plant service.

B0119 reports that two Marathon 300s, one 1600, and one each of Curtis Type "L," Buchanan 0222 and 0524, and General Electric EB-5 were thermally aged at 280°F for 300 hours. The peak temperature of the LOCA profile was 312°F (maintained for approximately 30 minutes). Review of test results reveal that only one of the Marathon 300s was powered with 480 Vac for operability testing (the others were not powered during the LOCA test). Consequently, actuator performance during the LOCA was not demonstrated for all of the TBs under test.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the Regional Administrator of the appropriate regional office or this office.

Charles E. Rossi, Director  
Division of Operational Events Assessment  
Office of Nuclear Reactor Regulation

Technical Contact: S. D. Alexander  
(301) 492-7480

Attachment:  
List of Recently Issued Information Notices