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MEMORANDUM FOR: James M. Taylor, Director, Division of Quality Assurance, Safeguards, and Inspection Programs, IE

FROM: Richard L. Bangart, Director, Division of Vendor and Technical Programs, Region IV

SUBJECT: GENERIC QA PROBLEMS IN THE EQUIPMENT QUALIFICATION INDUSTRY

In a recent telephone conversation between you and Messrs. U. Potapovs and H. S. Phillips of my staff, you requested the following information relative to generic QA problems identified by my staff.

The Equipment Qualification Section (EQS) has performed 17 QA programmatic reviews of companies that perform tests to environmentally qualify safety-related electrical equipment used in the harsh environment. This effort was started in late August 1982 and was considered to be an interim measure or substitute until the IEEE Third Party Accreditation Program could accredit companies that perform tests. The accreditation program was to be implemented by verifying a test organization's establishment and implementation of a QA program based on 10 CFR Part 50, Appendix B and by verifying test capability.

During these QA programmatic reviews, several generic problems related to the testing industry have been identified. They are as follows:

1. Organizations (architect engineers (AEs), manufacturers, suppliers, and test laboratories) have failed to include 10 CFR Part 50, Appendix B or equivalent quality requirements and 10 CFR Part 21 requirements in purchase orders or contracts.

   NOTE: In one case Associated Testing Laboratories was performing environmental qualification testing without knowing they were testing safety-related electrical equipment because the purchase order or contract did not include quality or 10 CFR Part 21 requirements. As a result of Boston Insulated Wire Company's (BIW) failure to pass on requirements, Associated Testing Laboratories erroneously informed Region IV EQS personnel that they were doing no nuclear environmental testing. Based on this information the NRC made no plans to inspect their QA program or observe testing.

   One must question if there are other laboratories who do not know they are performing critical tests on safety-related electrical equipment. NRC inspections have identified many similar failures to pass on requirements

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and this is considered a serious problem because in some cases no audits by the licensee, contractors, or the NRC may occur because there appears to be no requirement. Also, testing without knowing the criticality of the equipment being tested would likely cause less caution during testing and little concern relative to deviation or defect reporting in accordance with 10 CFR Part 21.

2. Approximately 18 percent of the testing facilities inspected failed to establish and implement a QA program.

   NOTE: This figure might be higher if testing facilities performing only seismic testing were included. To date facilities performing only seismic testing per IEEE Standard 323 requirements have not been identified and/or inspected.

3. Approximately 41 percent of the testing facilities had failed to properly implement 10 CFR Part 21 relative to invoking 10 CFR Part 21 requirements in procurement documents, developing procedures, posting 10 CFR Part 21 documents, and/or evaluating or reporting deviations/defects.

4. Approximately 94 percent of the manufacturing test facilities and testing organizations inspected had QA programs that were deficient or nonconforming. The seriousness of these nonconformances ranged from no QA program to less serious nonconformances such as failing to follow procedures.

The generic problems described above have been caused by the test organization's customers (manufacturer, AE, or licensee). That is, these upline customers have failed to pass on NRC requirements in procurement documents, failed to assure that QA programs were established and properly implemented, and failed to assure that 10 CFR Part 21 requirements were implemented. It is apparent that the audit process (licensee to lowest subcontract tier) is not working properly. A recent example was identified at BIW where three utilities and five AEs had performed audits of the BIW QA program for manufacturing but had not audited the EQ test program to assure proper establishment/implementation. At NAMCO, Acme Cleveland Development Company, and The Georgia Institute of Technology, the failure to establish QA programs and the failure of the upline audit systems was also apparent. A great number of manufacturers, AEs, and utilities could be listed or tracked down to show their direct and indirect responsibility and failure to assure that these problems were identified and repetition precluded. The above statistics dispute industry claims that the present industry efforts are adequate.

I have received feedback from my staff relative to how areas of the Region IV Equipment Qualification Inspection program may be improved and where emphasis needs to be placed to make this program more effective. Based on practical experience gained during field inspections and engineering evaluations, we will submit comments and recommendations in a separate memorandum. If you have technical questions regarding the above information, please contact Mr. H. S. Phillips at FTS 728-8172.

Richard L. Bangart, Director
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