U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV

Report No. 99900277/79-01 Program No.

Company: The Rockbestos Company
A Member of the Marmon Group
285 Nicoll Street
New Haven, Connecticut 06504

Inspection at: New Haven and East Granby, Connecticut

Inspection
Conducted: April 23-26, 1979

Inspector: D M Hunnicutt for J. R. Agee, Contractor Inspector
Vendor Inspection Branch — 5/10/79 Date

Approved by: D M Hunnicutt
D. M. Hunnicutt, Chief, Components
Section II, Vendor Inspection Branch — 5/10/79 Date

Summary

Inspection on April 23-26, 1979 (99900277/79-01)

Areas Inspected: Implementation of 10 CFR 50, Appendix B and applicable codes and standards including: action on previous inspection findings; quality assurance manual/program involving auditing, training, receiving inspection, and nonconformances; design control; inspection and tests; and measurement and calibration. The inspection involved twenty-five (25) inspector-hours on site.

Results: In the five (5) areas inspected, no apparent deviations or unresolved items were identified.

Details Section

A. Persons Contacted

R. C. Brown - Quality Engineer
G. S. Buettner - Technical Director
E. D. Ford - Quality Supervisor
M. C. Goldberg - Contract Administrator
*G. G. Littlehales - Quality Assurance Manager
J. M. Maganelli - Quality Control Manager
E. S. Reed - Vice President and General Manager

*Attended the exit interview

B. Action on Previous Inspection Findings

1. (Closed) Deviation (Inspection Report No. 77-01): The QA Manual does not require training for personnel performing quality related functions. The inspector verified by review of the QA Manual and related quality documents that a training program and a means for evaluating suitable proficiency has been implemented.

2. (Closed) Deviation (Inspection Report No. 77-01): Manufacturing Instruction Tags (MITs) have been released for manufacture of products without approval by Manager of Standards Engineering. The inspector verified by random sampling of subsequent MITs, that each had been approved by the Supervisor of Specification Engineering or his designee in compliance with the latest revision of the QA Manual.

C. Quality Assurance Manual/Program

1. Objectives

The objectives of this area of the inspection were to verify that the:

a. QA Manual had been maintained current per commitment.

b. QA Program had been implemented in the area of auditing, training, receiving inspection, and nonconformances.

c. Organizational structure and facility capabilities are sufficient to design and manufacture electrical cables for Class IE applications.

2. Method of Accomplishment

The preceding objectives were accomplished by:

a. Discussions with the Quality Assurance Manager concerning the quality program for the New Haven and East Granby plants.

b. Review of the QA Manual and determining that it had been revised January 1978 as Edition 14 with a format similar to 10 CFR 50, Appendix B. Additional administrative revisions were made to the manual in April and November 1978. Records indicate the manual has been reviewed semi-annually.

c. Review of the Quality Procedure Q-25, Training, Revision 2, April 27, 1978, and the QA Manager's training manual and training notebook which contain separate coverage for each job category, such as quality supervisor, electrical tester, electrical test helper, process inspector, working assistant, chief technician, technician and others.

d. Review of QA Manual, Section 19, Audits, November 1, 1978, and Quality Procedure Q-30, Outline of Requirements for Auditing of QA Programs.

e. Review of the audit schedule and records for 1978 and determining that twenty-seven (27) of twenty-nine (29) audits scheduled have been completed. Seven (7) audits had been made of the East Granby plant. A review of random selection of the audit reports in such areas as: organization and responsibilities; identification and control of materials, components and parts; procedures for tool and gage control revealed that several findings had been identified. The QA auditors had recorded several recommendations for improvements in the areas inspected. Where findings had been identified, adequate responses had been provided.

   Twenty (20) audits had been scheduled for 1979. As of April 24, 1979, two (2) of the scheduled audits had been conducted.

f. Review of the QA Manual Section 8, Receiving Inspection, Quality Procedure Q-7, Receiving Inspection Procedure - New Haven, Revision 18, August 14, 1978, and inspection of receiving inspection practices. Incoming materials for several purchase orders were traced for disposition. An example includes PO #89249 for KL-486-D material:

Lot No.	Date Received	Date Lab Test Approval
211133-211197	4/18/79	4/20/79
253419-253450	4/12/79	4/12/79
199836-199900	3/19/79	3/21/79
188586-188588	4/4/79	4/5/79

Each container for each lot of the above materials was appropriately stamped in compliance with applicable receiving inspection quality procedures.

Other materials containers that were stamped indicating acceptance based on laboratory testing and/or vendor certification include: silicone elastomer composition, flame-retardant cross-linkable polyethylene, EPR, neoprene and hydrogen compounds.

Several containers of some of the above type raw materials had been identified as nonconforming and were placed in the locked Quality Control Hold Area. Each had been rejected with attached Raw Material Rejection Report forms pending ultimate disposition.

3. Findings

Within this area of the inspection, no deviations or unresolved items were identified.

D. Design Control

1. Objectives

The objectives of this area of the inspection were to verify that:

a. Cabling products are designed and manufactured to meet customer specifications and applicable codes and standards.

b. Cable designs are reviewed and approved in compliance with implemented procedures.

c. Prototypes of new cable and revised cable design are qualification tested for compliance to established national codes and standards.

2. Methods of Accomplishment

The preceding objectives were accomplished by:

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a. Discussions with the Technical Director concerning cable designs, qualification programs and compliance to national cable codes and standards.

b. Review of customer purchase orders and specifications for cabling for Class IE application, including PO No. 10407-13-EM-058, dated October 4, 1976, for 600V copper power cable, safety related quality Class Q, flame resistant. Attachment to the PO includes Specification No. 13-EM-058 which states in part, ". . . All cables shall be manufactured and tested in accordance with all applicable requirements of IPCEA Standard 5-19-81 . . . 5-66-524 . . . All cable shall be qualified in accordance with all applicable requirements of IEEE 383-1974 and IEEE323-1974 . . . The Project Quality Assurance Program is governed by NRC Regulation 10 CFR 50, Appendix B . . . and applicable provisions of ANSI N45.2-1971 . . . ."

Records indicate Rockbestos made several waiver requests to the customer on this contract, including:

Waiver Identification and Date	Customer Approval and Date
W/28 (7/18/78)	8/15/78
W/29 (7/18/78)	8/15/78
W/29A (7/27/78)	9/5/78
W/30 (7/18/78)	8/15/78
W/31 (7/18/78)	8/15/78
W32A (8/8/78)	8/21/78
W33 (8/8/78)	8/21/78
W35 (10/19/78)	10/23/78
W36A (10/23/78)	10/24/78
W37 (2/5/79)	2/23/79
W38 (4/3/79)	4/4/79

c. Review of the following Rockbestos documents which had been submitted to various customers representing their qualified product to meet Class IE applications:

(1) Qualification of Firewall III, Class IE Electric Cables, dated July 7, 1977.

(2) Qualification of Firewall III, Class IE Electric Cables, dated June 7, 1978.

d. Review of document, Rockbestos Firewall III, Electric Cable, Prototype Test Data, dated September 13, 1978, which provides test data for single conductor cable in the following areas: insulation characteristics; jacket characteristics; type tests including long term physical aging, thermal and radiation exposure, LOCA, main streamline break condition, flame; special moisture exposure; jacket abrasion resistance test; corrosive effects tests; insulation cut-through test and insulation crush test.

3. Findings

Within this area of the inspection, no deviations or unresolved items were identified.

Comment: While the cable qualification test data supplied appears to satisfy the contents of customer specifications, the data presented is based on tests of single conductor cable and not on multiconductor cable. The qualification data specifically addresses criteria of IEEE-383 (1974), IPCEA 5-19-81 and 5-66-524 with references to selected sections of IEEE-323 (1974) and related Arrhenius Plots. Multiconductor cables are currently fully qualified to IEEE-323 (1974); however, ongoing testing and in site aging provides supportive data concerning the integrity of the cables.

E. Inspection and Tests

1. Objectives

The objectives of this area of the inspection were to verify that:

a. Manufacturing activities are inspected and controlled for each progressive stage of production.

b. Manufacturing activities are conducted in compliance with approved and established procedures.

c. Manufacturing inspection is conducted by quality control inspectors.

d. Electrical and laboratory tests are completed on the products in various stages of production and in conjunction with final inspection of the finished product.

2. Methods of Accomplishment

The preceding objectives were accomplished by:

a. Discussions with QC management, manufacturing and inspection personnel for both the New Haven and East Granby plants.

b. Review of the QA Manual, Section 11, Inspection, dated January 3, 1978, and Section 12, Test Control dated April 17, 1978.

c. Examining the inspection and test practices and activities at both the New Haven and East Granby plants and verifying that one hundred per cent (100%) production testing is made on single conductor cables, that the testing is completed in compliance with implemented procedures, and that functions such as dielectric strength, insulation resistance, continuity, spark test, etc., are completed in compliance with IPCEA/IEEE standards criteria.

3. Findings

Within this area of the inspection, no deviations or unresolved items were identified.

F. Measurement and Calibration

1. Objectives

The objectives of this area of the inspection were to verify that:

a. A system has been established and is maintained to assure that tools, gages, instruments and other measuring devices used in activities affecting quality are properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within specified limits.

b. Calibration records are kept for each instrument and that calibration labels are affixed to, or located with the instruments.

2. Methods of Accomplishment

The preceding objectives were accomplished by examining a random selection of quality measuring instruments located in the New Haven and East Granby plants for calibration labels and data. Instruments identified included the following:

a. Calibration and footage counter T-209.

b. Peschel Instrument
Model K24-508
24KV - 50KVA

c. Insulation Resistance Tester
Hypotronics
MGA Megohmeter
50/100/500V

d. Kelvin Bridge
L&N No. 4287
Range 0.0001 to 110.1 ohm

e. Digital Voltmeter
Model 8000A

f. Hypotronics Inc.
Insulation Tester Model 230DC

g. Hypotronics Inc.
Multi Reel Tester
Model 7075-75

h. Hypotronics Inc.
DC Insulation Test Set, 2A-060-1005
1644 Megohm Bridge and General Radio
A.C. Dielectric Test Set No. 75-21641.

i. PI Peschel Instrument Inc.
No. 5766

Note: The instruments listed above are mounted on the electrical final test panels or are used independently in conjuction with final testing of conductors and cables at the final test panels. They are not used as portable instruments.

3. Findings

Within this area of the inspection, no deviations or unresolved items were identified.

Comments: As of the date and week of this inspection, the Rockbestos Company was converting the maintenance and calibration responsibilities from the Rockbestos Company to a recognized electrical testing laboratory. New calibration labels with the identity of the testing laboratory, dated April 1979, were affixed to the listed instruments. Remnants of the Rockbestos calibration labels were still affixed to the instruments. Data obtained

from the Rockbestos calibration records for the listed instruments revealed that the instruments with the testing laboratory labels affixed were scheduled for recalibration, during April 1979. Cross reference data from old to new calibration data was compatible. Since the instrument calibration and record maintenance responsibilities are in a transition stage, the revised program will be further inspected in a future inspection.

G. Exit Interview

At the conclusion of the inspection on April 26, 1979, the inspector met with the Quality Assurance Manager, at the East Granby plant, and summarized the scope of the inspection concerning the following areas:

1. Closure of the previous inspection findings.

2. Quality Assurance Manual/Program including: auditing, training, receiving inspection, and nonconformances.

3. Design Control.

4. Inspection and tests.

5. Measurement and calibration.

Records and data concerning items 2, 4, and 5 above, that were not conveniently available during the course of the inspection, were made available to the inspector and clarifications completed during the exit meeting.

The Vice President and General Manager who was unable to attend the exit meeting at the East Granby plant was subsequently contacted by telephone concerning the summary of the inspection.

Management acknowledged the inspector's summary of the inspection.