

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

Report No. 99900116/80-01

Program No. 51300

Company: Bunker-Ramo Corporation  
Amphenol North America Division  
9201 Independence Avenue  
Chatsworth, CA 91311

Inspection Conducted: January 28-31, 1980

Inspector: J. R. Agee 2-27-80  
J. R. Agee, Contractor Inspector Date  
Components Section II  
Vendor Inspection Branch

Approved by: D. M. Hunnicutt 2-27-80  
D. M. Hunnicutt, Chief Date  
Components Section II  
Vendor Inspection Branch

Summary

Inspection on January 28-31, 1980 (99900116/80-01)

Areas Inspected: Implementation of QA Manual to ASME Code and customer requirements including action on previous inspection findings; QA Manual/Program implementation; electrical penetration assembly qualification tests, nonconforming items; review of authorized nuclear inspector logs and measurement and calibration. The inspection involved twenty-nine (29) inspection hours on site.

Results: In the five (5) areas inspected, one (1) deviation and no unresolved items were identified.

Deviations: Measurement and Calibration - inactive instruments were stored intermingled with active instruments contrary to requirement for storage in designated inactive instrument storage area. (Notice of Deviation, Item A)

DETAILS SECTIONA. Persons Contacted

- \*A. Berk - President
- R. McCann - Electrical Calibration Technician
- R. Ragahavin - Mechanical Calibration Technician
- \*H. D. Wright - Quality Assurance Manager

\*Attended exit interview.

B. Action on Previous Inspection Findings

1. (Closed) Deviation (Report 79-01): Training records of quality assurance engineers (auditors) had not been retained. The inspector verified that records of auditors, quality assurance engineers and others whose functions affect quality had been compiled and were being maintained current.
2. (Closed) Unresolved Item (Report 79-01): Publication of the "Design Qualification for Electrical Penetration Assemblies, Report No. 123-2239," originally scheduled for publication in 1978, which was not available for review during 79-01 inspection has now been issued as Revision 3, dated November 27, 1979.

C. Quality Assurance Manual/Program Implementation1. Objectives

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

- a. The QA Manual and related QA procedures had been maintained current.
- b. Activities affecting quality are performed in compliance with implemented instructions and procedures, example: Procedures for handling non-conforming items, manufacturing procedures, instrumentation calibration procedures, workmanship procedures.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Verifying the QA Manual was revised December 1, 1978 and January 5, 1979 to reflect organizational code requirements and vendor audit schedule changes and other miscellaneous editorial corrections.

- b. Review of the QA Manual Sections:
  - (1) 13.0 Nonconforming Material or Items
  - (2) 7.0 Control of Manufacturing Process
  - (3) 9.0 Control of Test Procedures
  - (4) 10.0 Control of Manufacturing and Test Equipment
- c. Inspection of in-process manufacturing activities and verified that related activities were being performed in compliance with applicable procedures, examples; module preparation, module curing, module vacuum testing, wiring harness preparation including crimping practices and penetration leak checking.

### 3. Findings

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

## D. Electrical Penetration Assembly Qualification Tests

### 1. Objectives

The objectives of this area of the inspection were to verify that the qualification testing of generic electrical penetration assemblies (EPAs) had been completed and that final qualification documentation had been approved by the related customers.

### 2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of the Design Qualification Report for Electrical Penetration Assemblies for Project CP-0460, Report No. 123-2233, Revision 3, dated November 21, 1979. This report had been approved by Bunker-Ramo engineering management.
- b. Cursory review of the three (3) volumes of the Generic I Qualification Test Report on Nuclear Power Generating Station Electrical Penetration Assemblies, Report No. 123-2159 dated June 27, 1979. This report was compiled by a recognized test laboratory and provides data for all tests, such as, flame tests, thermal aging, electrical tests, cycling and aging tests, and seismic vibration tests. This report contains the raw data developed by the test laboratory during the qualification testing of the generic EPAs.

3. Findings

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

4. Comments

The Design Qualification Report (item 2.a) had been submitted to the customer for Project CP-0460 but had not been approved by this customer. Bunk-Ramo is currently compiling additional data to satisfy this customer's outstanding comments on the Design Qualification Report.

Similar (essentially identical) design qualification reports to item 2.a have been submitted to three (3) additional customers who have approved the design qualification reports for the EPAs for their respective projects.

E. Nonconforming Items1. Objectives

The objectives of this area of the inspection were to verify that procedures had been implemented for the control, handling and disposition of nonconforming materials and equipment.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of Quality Assurance Procedure (QAP) Control of Nonconforming Materials.
- b. Verify the Authorized Nuclear Inspector is apprised of all nonconforming items and that he completes review and acceptance of documentation and nonconforming materials that are returned to the manufacturing process.
- c. Review of nine (9) Inspection Discrepancy Reports (IDRs) including the following:
  - (1) IDR No. 15761, contract item 2E36, Header Plate, Instrumentation Type, 50021955, AS-181-51. Depth of drilled holes not sufficient. Item and IDR reviewed and approved by MRB, QAE, PE and ANI September 18, 1979. This EPA had not been shipped.

- (2) IDR No. 15650, Header Plate 50021955, AS-176-7. Machining depth not to drawing. Item and IDR reviewed and approved by MRB, QAE, PE, ANI September 24, 1979.
- (3) IDR No. 15652, Contract item 2E19, Header Plate, 50021955, AS-176-47. Machined cavity not sufficient. Item and IDR reviewed and approved by MRB, QAE, PE and ANI, September 24, 1979.

3. Findings

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

F. Review of Authorized Nuclear Inspector Logs

1. Objectives

The objectives of this area of the inspection were to verify the ANI inspects and approves pertinent dimensions, test and data of nuclear safety related EPAs.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of twenty-three (23) QA Data Packages of EPAs that had been shipped.
- b. Identifying test data and hold points on Manufacturing Inspection Travelers (MITs) from the twenty-three (23) QA Packages, listed above, that the ANI had signed-off on. Compared the ANI sign-off items with the ANI log and verified the ANI had recorded in his log all the data he had reviewed, approved and dated in the QA Data Packages mentioned above.

3. Findings

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

G. Measurement and Calibration

1. Objectives

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

- a. That a system had been established and maintained to assure that tools, gages, instruments and other measuring devices

used in activities affecting quality are properly controlled, calibrated and adjusted at specific periods to maintain accuracy within specified limits.

- b. That the system had been adequately documented with approved procedures and that these procedures are being implemented.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of the QA Manual Section 10.0 Control of Measuring and Test Equipment, Revision G, dated January 5, 1979.
- b. Inspection of the electrical calibration laboratory calibration record recall cards and verified that, from fifteen (15) instruments identified, each had been recalled on a planned schedule and recalibrated. Calibration cards examined included the following:
  - Cablemaster ABR3028
  - Cablemaster test fixture ABR 2024
  - Durometer ABR3215
  - Thermal stripper 3471
  - Power supply 3301
  - Pneumatic crimper TW850-0272-08
  - Finish gage TW658-0-0019
- c. Inspection of the electrical instrumentation files and verified that each identified instrument file folder contained the appropriate calibration procedure in compliance with QA program requirements.
- d. Inspection of the electrical calibration laboratory storage cabinets and found active and inactive instruments stored in the same cabinets.
- e. Inspection of several electrical instruments located throughout the manufacturing area and determined that each had the appropriate and current calibration label attached.
- f. Inspection of the mechanical and gage calibration laboratory calibration record recall cards and verified that, from fourteen (14) instruments identified, each had been recalled on a planned schedule and recalibrated or dimensions verified. Calibration cards examined include the following:

Profilometer 651-62-0023  
Intramik 657-71-0158-1-01  
Crimper 850-61-0004-3  
Crimper 850-60-0004-9  
Torque wrench 851-65-0035  
Torque wrench 851-69-0052-1

- g. Inspection of the mechanical and gage calibration laboratory calibration cards for inactive instruments. Verified by inspection of ten (10) instruments located in the tool crib storage area that each was in storage there in compliance with related calibration card data and calibration card recall system.

### 3. Findings

a. Deviations

- (1) See Notice of Deviation

b. Unresolved Items

None.

c. Comment

A former government inspector (not NRC), for a short period of time, directed Bunker-Ramo to date their electrical calibration cards by the Julian calendar dating method. Several calibration cards were examined that displayed the Julian dating order, example: 23/5/78, which interpreted means, 23 May 1978. This is in contrast to the generally accepted practice of dating, example: 5/23/78, which interpreted means May 23, 1978. Several cards were examined that contained both dating methods. This was confusing. Bunker-Ramo management stated that as soon as they recognize the confusion caused by use of the Julian dating method they discontinued its use. They have not completely purged their files of the Julian dated cards but are changing and correcting the cards as they come across them in their normal calibration card/instrument recall system.

### H. Exit Interview

At the conclusion of the inspection on January 31, 1980, the inspector met with the management representatives identified in paragraph A. above. The inspector summarized the scope and findings of this inspection.

Management acknowledged the statements relative to the findings.