

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

Report No. 99900001/79-01

Program No. 51500

Company: Babcock and Wilcox Company
Nuclear Materials Division
P. O. Box 1260
Lynchburg, Virginia 24505

Inspection Conducted: May 8-11, 1979

Inspector: *W. M. McNeill*
W. M. McNeill, Contractor Inspector, Vendor
Inspection Branch

05/22/79
Date

Approved by: *D. E. Whitesell*
D. E. Whitesell, Chief, Components Section I,
Vendor Inspection Branch

05/22/79
Date

Summary

Inspection on May 8-11, 1979 (99900001/79-01)

Areas Inspected: Implementation of 10 CFR 50, Appendix B, including control of special processes; records; audits; review of manufacturing activities, and action on previous inspection findings. The inspection involved twenty-six (26) inspector-hours on site by one (1) NRC inspector.

Results: In the five (5) areas inspected no apparent deviations or unresolved items were identified in four (4) areas. The following one unresolved item was identified in the following area.

Deviations: None.

Unresolved Items: Audits (See Details, paragraph E.3.b.).

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Details Section

A. Persons Contacted

- *R. A. Alto, Manufacturing Manager
- *W. T. Engelke, Manufacturing Engineering Manager
- *J. Fisher, Manager QC
- *R. J. Flicker, Supervisor QC Engineering
- *K. L. Harris, Chief Inspector
- J. R. Mayberry, NDT Supervisor
- *E. J. Silk, Plant Manager
- W. L. Tibbs, QC Engineer

*Denotes those attending the exit interview.

B. Action on Previous Inspection Findings

(Closed) Unresolved Item (Report No. 78-02): The document control procedure was to be revised to be consistent with current practices. It was verified that the manufacturing document control procedure MA-AD-1200 has been revised.

C. Control of Special Processes1. Objectives

The objectives of this area of the inspection were to verify that special processes are properly qualified and controlled in accordance with Criterion IX, Appendix B, 10 CFR 50 and the Quality Assurance Manual.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of the Commercial Nuclear Fuel Plant Quality Assurance Manual, Revision 9, Section 9, Titled Control of Special Processes, which established the general requirements for control of special processes.
- b. Review of the specifications, Titled Zirconium Alloy Tubing, 08-1214-04, and Pellet Type Zircaloy-4 Clad Fuel Rod, 08-1116-01, which established the design requirements.

- c. Review of the following procedures which established specific requirements of control of special processes:

Ultrasonic Examination of Clad to End Cap Welds of Mark B Fuel Rods, QC-701, Revision 1,

Ultrasonic Testing of Tubing, QC-704, Revision 4,

Ultrasonic Test Personnel Qualification, QC-705, Revision 1,

Ultrasonic Test Equipment and Calibration Standard Qualification, QN-GE-707,

Helium Leak Detection, QC-700, Revision 1,

Helium Leak Test Personnel Qualification, QN-GE-706, Dated August 23, 1977, and

Bulk Helium Test Equipment Qualification, QC-716, Revision 1.

- d. Witness of the Tac Tic Ultrasonic Tube Tester, Sonic weld inspection station, and Veeco Helium Leak Detector operation. Verification that the operating procedures were at the work station, consistent with the specifications, adequate and implemented. Verification that the equipment was calibrated.
- e. Review records of the personnel and equipment qualification. This inspection included standards data, personnel certifications, transducer certifications and equipment qualification records.

3. Findings

a. Deviations

None.

b. Unresolved Items

None.

D. Records

1. Objectives

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

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- a. Quality assurance records are identified, collected and stored in such a way that the fuel quality history is documented and protected.
- b. The manufacturer's records system meets the requirements of Criterion XVII, Appendix B, 10 CFR 50.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of the Commercial Nuclear Fuel Plant Quality Assurance Manual, Revision 9, Section 17, Titled Quality Assurance Records, which established the general requirements for control of records.
- b. Review of the following procedures which established specific requirements of records:

Quality Assurance Records Retention, QC-AD-1414, Dated February 7, 1978,

Storage of Quality Assurance Records Relating to Fuel Assemblies and Control Components, QC-AD-1418, Dated September 25, 1975, and

Conformance Certifications and Supplier Certificate of Conformance, QC-AD-1424, Dated August 17, 1977.

- c. Review of the records for a recently shipped fuel assembly. This inspection included checking the records for legibility, indexing, identification, and implementation of the above procedures. The inspection included such records as releases, material certifications, inspection reports, over checks, chemical analysis, route cards, purchase orders, and variation notices.
- d. Inspection of storage area for records and verification that accountability, access control, and protection was provided.

3. Findings

a. Deviations

None.

b. Unresolved Items

None.

E. Audits1. Objectives

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

- a. The fuel manufacturer has implemented a system of audits sufficient to determine the effectiveness of the manufacturer's quality assurance program.
- b. The manufacturer's system meets the requirements of Criterion XVIII, Appendix B, 10 CFR 50.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of the Commercial Nuclear Fuel Plant Quality Assurance Manual, Revision 9, Section 18, Titled Audits, which established the general requirements for audits.
- b. Review of the following procedures which established specific requirements of audits:
 - (1) Quality Program Audit for CNFP Vendors, QC-1409, Revision 2;
 - (2) Internal Audits of the CNFP Quality Control Program, QC-1411, Revision 1; and
 - (3) Instruction and Training of CNFP Audit Personnel, QC-1416, Revision 3.
- c. Review of three (3) recent internal audits and four (4) vendor audits in detail in order to verify implementation of the above.
- d. Review of the recent internal and vendor audit schedules, personnel training and lead audit or qualification records for the above audits.

- e. Verification that the above audits utilized audit plans, findings were reported to managements, reports documented the audit activity, and that a comprehensive scope was found.

3. Findings

a. Deviations

None.

b. Unresolved Item

Audit findings, unresolved items and recommendations were logged on a Audit Matrix Report. These reports were used to maintain status of the problems identified. There is a discrepancy concerning the recording of the concurrence with the audit results. The discrepancy is that concurrence with the corrective action is being logged, rather than concurrence with the findings as required by the procedure. B&W will resolve the apparent discrepancy.

F. Review of Manufacturing Activities

1. Objectives

The objectives of this area of the inspection were to review the work load in terms of existing capacity, identification of principal contracts and unique differences between contracts in fuel assembly design, manufacture, and QC/QA requirements. In addition, the objectives were to identify any systematic or generic problems with fuel fabricated by the manufacturer. And, the objectives were to identify anticipated changes in fuel manufacturing and processing or in scope of supply.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Discussion with management and technical personnel on the above subjects.
- b. Observation of shop manufacturing activities on the above subjects.

3. Findings

- a. B&W will in the near future qualify General Electric, Wilmington, North Carolina, as a supplier of fuel pellets. This is considered to be necessary because B&W lacks the necessary capacity to meet its existing schedules.
- b. No other changes were noted in the design, manufacture or quality requirements. No significant generic problems have been experienced by the fuel manufacture.

C. Exit Interview

The inspector met with management representatives (denoted in paragraph A) at the conclusion of the inspection on May 11, 1979. The inspector summarized the scope and findings of the inspection. The management representatives had no comment in response to each item discussed by the inspector.