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

Report No. 99900001/80-01 Program No. 51500

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

Inspection Conducted: April 29 - May 2, 1980

Inspector: W. M. McNeill 5/9/80
W. M. McNeill, Contractor Inspector Date
Components Section I
Vendor Inspection Branch

Approved by: D. E. Whitesell 5/9/80
D. E. Whitesell, Chief Date
Components Section I
Vendor Inspection Branch

Summary

Inspection on April 29 - May 2, 1980 (99900001/80-01)

Areas Inspected: Implementation of 10 CFR 50, Appendix B, including document control; nonconformances and corrective actions; grids and miscellaneous components and action on previous inspection findings. The inspection involved twenty-six (26) inspector-hours on site by one (1) NRC inspector.

Results: In the four (4) areas inspected no apparent deviations or unresolved items were identified in one (1) area. The following three (3) deviations and one unresolved item were identified in the following areas.

Deviations: Pellet Attributes - pellet boxes were stamped as sampled, when they had not been sampled as required by the procedure, and Criterion V of Appendix B (Notice of Deviation, Item A); Nonconformances and Corrective Actions - a tray of 50 fuel rods was found in which approximately 15 were not identified as non-conforming as required by the QA Manual, and Criterion V of Appendix B (Notice of Deviation, Item B); Grids and Miscellaneous Components - the amperage limits were not included in the fabrication welding procedure and the voltage limits were exceed in welding contrary to the qualification report and Criterion V of Appendix B (Notice of Deviation, Item C).

Unresolved Item: The records of the qualification of one welder could not be found before the end of the inspection. (See Details paragraph E.3.b.)

DETAILS SECTION

A. Persons Contacted

*R. A. Alto, Manufacturing Manager
*J. L. Brown, Data Evaluation, Supervisor
C. E. Campbell, Manufacturing Supervisor
S. E. Carter, Manufacturing Supervisor
*W. T. Engelke, Manufacturing Engineering Manager
*J. Ficor, Manager QC
*R. J. Flicker, Supervisor QC Engineer
R. D. Foster, Surveillance Specialist
A. F. Garnier, Manufacturing Engineer
*K. L. Harris, Chief Inspector
*W. F. Heer, Operations Manager
T. H. Killingsworth, Production & Inventory Control Manager
*L. T. Lee, Manufacturing Foreman
R. A. Lee, Data Evaluation Technician
J. R. Mayberry, Inspection Supervisor
D. R. Mayberry, Data Evaluation Specialist
J. M. Muncy, Purchasing Manager
B. W. Pugh, Transportation and Stores Supervisor
W. L. Tibbs, Surveillance Specialist
T. L. Wilcox, Inspection Supervisor

*Denotes those attending the exit interview.

B. Action on Previous Inspection Findings

1. (Closed) Deviation (Report No. 79-02): based on the data of a recent lot of pellets, it appears that samples were not selected from the same Lot Master sample. A review of the Resinter samples and their data as compared to the Lot Master samples and their data did not detect any differences as previously reported. The sampling procedures were changed to minimize the possibilities of sample crossover.

2. (Closed) Deviation (Report No. 79-02): pellets were not selected at the frequency required. The sampling plan was revised in order to simplify the task and reduce errors. However, the following deviation was noted in the close out of this deviation. Deviation: See Notice of Deviation, Item A.

3. Comment

In verification of the sampling procedure it was noted that the Lot Master sample for lot 6 indicated 83 boxes to have been sampled. In

fact 93 boxes were inventoried and stamped as sampled. It was reported that ten boxes of pellets appeared to had been over looked. The randomness of the Lot Master sample was lost because those ten boxes were not represented.

C. Document Control

1. Objectives

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

a. The fuel manfacturer's document control system for design, manufacturing, and quality assurance documents is consistent with Regulatory requirements.

b. The document control system includes all drawings, specifications, procedures, instructions, etc. which affect quality.

2. Method of Accomplishment

The preceding objectives were accomplished by:

a. Review of the Commerical Nuclear Fuel Plant Quality Assurance Manual, Revision 10, Section 6, Document Control which established the general requirements for document control.

b. Review of the following procedures which established specific requirements of document control:

Quality Control Temporary Procedure Revisions, QC-1432, Revision 1 and

Distribution of CNFP Quality Control Documents, QC-1425, Revision 1.

c. Inspection of the Quality Control Temporary Procedure Revision Log, Document Control Voucher and Quality Control Temporary Procedure Revision Forms. Inspection of a sample of procedures, 40 in total, and 10 different work stations. The inspection verified implementation of the above procedures and manual requirements.

3. Findings

a. Deviations

None

b. Unresolved Items

None

c. Comments

None

D. Nonconformances and Corrective Actions

1. Objectives

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

a. The manufacturer's system contains sufficient measures to provide assurance that nonconforming materials, parts, or components are not inadvertently utilized and that prompt corrective actions are taken.

b. The manufacturer's system meets the requirements of Criteria XV and XVI, Appendix B, 10 CFR 50.

2. Method of Accomplishment

The preceding objectives were accomplished by:

a. Review of the Commerical Nuclear Fuel Plant Quality Assurance Manual, Revision 10, Sections 15, Non-Conforming, Materials, Parts or Components, and 16, Corrective Action, which established the general requirements for control of nonconformances and corrective actions.

b. Review of the following procedures which established specific requirements of control of nonconformances and corrective actions:

Tagging Components, Parts and Assemblies, QC-822, Revision 3,

Corrective Action, QC-1412, Revision 1 and

Non-Conforming Materials, Parts, or Components, QC-1413, Revision 3.

c. Inspection of the shop floor and nonconforming material found for proper tagging, and disposition of the nonconforming condition, or rework/repair. Component Discrepancy Report (CDR) Contract Variation Approval Request (CVAR) Corrective Action

Meeting Reports were reviewed. This inspection verified the above procedures and manual requirements to be implemented with the exception below.

3. Findings

a. Deviation

See Notice of Deviation, Item B.

b. Unresolved Items

None

c. Comments

A tray of fuel rods was found separated from the production flow. All rods in this tray were nonconforming. Some 10 of the 50 or so rods were documented on CDR 1299 for project 27A. The CDR had been written for a quanity of 41 rods. It would appear these 10 had been split off from the original repair routing.

E. Grids and Miscellaneous Components

1. Objectives

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

a. The manufacturing and quality control practices and procedures for in-house manufacture of grids and other miscellaneous components are sufficient to give assurance that these components meet specifications and contractual requirements.

b. The manufacturer's system is capable of producing quality components.

2. Method of Accomplishment

The preceding objectives were accomplished by:

a. Review of the Commerical Nuclear Fuel Plant Quality Assurance Manual, Revision 10, Sections 5, Instructions, Procedures, and Drawings; 10, Inspection; 14 Inspection test and Operating Status which established the general requirements for controls of grids and miscellaneous components.

b. Review of the Contract Information Sheets for project 67E and the following Specifications, and Drawings:

Burnable Poison Rod Assembly, Specification, 1204, Revision 3,

Coupling - Spider Assembly Specification, 1198, Revision 2,

Burnable Poison Pellet Specification, 1139W0001, Revision 3,

Quality Requirement Matrix, Drawing, 1003363, Revision 5,

Burnable Poison Rod Assembly Drawing 134575C, Revision 4,

Coupling - Spider Assembly Drawings, 11577[illegible], Revision 5,

Burnable Poison Rod Drawing, 115701 D, Revision 4 and

Mark - B Burnable Poison Pellet Drawing, 1004934 C, Revision O.

c. Inspection of the following manufacturing and inspection procedures:

Assembly of Coupling - Spider Assemblies, MA-478, Revision 1,

NSC Control Component Hardware Cleaning, MA-497, Revision 2, and;

Receiving Inspection RNS and BPR Coupling - Spider Assembly, QC-563, Revision 2,

d. Observation of the Coupling - Spider Assembly and inspection, and the Burnable Poison Rod, loading, welding and inspection in order to verify to above procedures and design requirements. Also qualification reports of the welding personnel and process were reviewed.

3. Findings

a. Deviation

See Notice of Deviation, Item C.

b. Unresolved Item

The QA Manual requires personnel qualification reports to be maintained (Section 9.2.4). Additional information is required to locate the qualification report of a welder used to weld a spot fusion weld on the Coupling - Spider (spider machine to coupling lub).

c. Comments

Qualification Report, ME-008 states the ranges of voltage and amperage to have been used for qualification. These ranges were included in the procedure at first. However after sometime a revision of the procedure dropped the amerage requirements. The voltage requirements wer exceed repeatedly. Even the qualification of personnel had been performed at less than the required voltage as documented on voltage tracings.

F. Exit Interview

The inspector met with management representatives (denoted in paragraph A) at the conclusion of the inspection on May 2, 1980. The nspector summarized the scope and findings fo the inspection. The management representatives had no comment in response to each item discussed by the inspector.