

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

Report No. 99900081/80-01

Program No. 51500

Company: Exxon Nuclear Company, Inc.
Nuclear Fuels Department
2101 Horn Rapids Road
Richland, Washington 99352

Inspection Conducted: June 9-13, 1980

Inspector:

W. M. McNeill

W. M. McNeill, Contractor Inspector
Components Section I
Vendor Inspection Branch

6/23/80
Date

Approved by:

D. E. Whitesell

D. E. Whitesell, Chief
Components Section I
Vendor Inspection Branch

6/23/80
Date

Summary

Inspection on June 10-12, 1980 (99900081/80-01)

Areas Inspected: Implementation of Topical Report including procurement controls; spacer components; material controls and action on previous inspection findings. The inspection involved twenty-four (24) inspector hours on site by one NRC inspector.

Results: In the four (4) areas inspected no apparent deviations or unresolved items were identified in three (3) of these areas. The following two (2) deviations were identified in the remaining area.

Deviation: Material Controls - some materials were found to be not traceable to the starting materials as required by the Quality Procedure No. 8, paragraph 1.2 and Criterion 5.0 of the Exxon Topical Report (Notice of Deviation A). Material Controls - some materials were found which were not identified with a cleaning date as required by the Quality Control Standard XN-S68146, paragraph 5.4, and Criterion 5.0 of the Exxon Topical Report (Notice of Deviation B).

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DETAILS SECTIONA. Persons Contacted

H. D. Bell, Supervisor Process Control
B. R. Black, Supervisor QC Engineering
*T. L. Davis, QA Manager, Nuclear Fuels
*E. E. Garrett, Manager Component Fabrication
E. N. Harbinson, Supervisor Inspection
M. G. Hill, Manufacturing Supervisor
M. J. Kirkman, Process Engineer
W. E. Korpi, Supervisor Manufacturing
J. R. Nance, Process Engineer Assistant
J. D. Pamp, Manager Purchasing
R. D. Reid, Welding Engineer
M. R. Schwab, Process Engineering and Development Manager
W. G. Tews, Metalography and Physical Testing Supervisor
*H. B. Thiss, Purchasing Agent

*Denotes those attending the Exit Interview.

B. Action on Previous Inspection Findings

(Closed) Deviation (Report 79-01): Preventative action was not documented on DMRs or their attachments. A review of current nonconformances found preventative action documented on DMRs.

C. Procurement Controls1. Objectives

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

- a. The fuel fabricator's procurement activities are being implemented in accordance with the requirements of Criteria IV and VII of 10 CFR 50, Appendix B or approved topical report as expanded and documented in his QA program and QA Manual(s).
- b. The fuel fabricator's procurement activities are being implemented in accordance with the requirements of ANSI N45.2, and ANSI N45.2.13 as appropriate and as documented in his QA program and manual or approved topical report.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of the Exxon Topical Report, NX-NF-1A, Revision 3, Sections 7, Control of Purchased Material, Equipment, and Services and Section 4, Procurement Document Control which established the general requirements for procurement controls.
- b. Review of Quality Assurance Procedure, #7, Procurement Control, which established specific requirements.
- c. Inspection of the purchase orders of twelve components for fuel assemblies. This review included accuracy and completeness of the technical requirements and quality requirements. The Approved Vendor List, Revision 13, was reviewed and the purchase specifications associated with the above purchase orders.

3. Findings

a. Deviations

None.

b. Unresolved Items

None.

c. Comments

None.

D. Spacer Components

1. Objectives

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

- a. The manufacturing and quality control practices and procedures for in-house manufacture of spacer 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 Exxon Topical Report, XN-NF-1A, Revision 3, Section 5, Instruction, Procedures and Drawing; Section 10

Inspection; Section 14, Inspection Test and Operating Status which established the general requirements for fuel assembly fabrication controls.

- b. Review of Product Specification Grid Spacer Assembly, XN-S30072, Revision 23; Process Specifications Welding of Spacers, XN-NF-P20, 308, Revision 10; and Spacer Weld Qualification, Revision 10; Drawing XN-NF-303, 311, Revision 2; and Test Authorization XN-PTA-286, Revision 2 which established design requirements.
- c. Review of Standard Operating Procedure, Spacer Assembly, Welding and Inspection, XN-S66, 203, Revision 4; Quality Control Standards, Spacer Fabrication and Inspection Record, XN-NF-P68399, Revision 2; Spacer Fabrication and Inspection XN-NF-P68489, Revision 0; and Quality Control Procedure, Inspection 14 X 14 Spacers, P69605, Revision 1.
- d. Inspection of the assembly, etching, inspection and welding stations and verification of the above procedures and design requirements. Inspection of the tooling and standards used at the stations. Inspection of process and personnel qualification reports.

3. Findings

a. Deviations

None.

b. Unresolved Items

None.

c. Comments

None.

E. Material Controls

1. Objectives

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

- a. The system for identification and control of materials, parts, components and subassemblies during fabrication is sufficient to prevent the use of incorrect or defective materials, parts or components.

- b. A system is utilized which will insure that all manufacturing and inspections steps are accomplished in the prescribed sequence.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of the Exxon Topical Report XN-NF-1A, Revision 3, Section 8, Identification and Control of Materials, Parts, and Components, which established the general requirements for material control.
- b. Review of Quality Assurance Procedure, Material Control and Identification, #8, which established the specific requirements.
- c. Inspection of materials use in spacer and skeleton fabrication and verification of their status, traceability and identification. Inspection of the follower cards used in fabrication on the above parts.

3. Findings

a. Deviations

None.

b. Unresolved Items

None.

c. Comments

- (1) Before the end of this inspection the follower card on the fuel assembly design in question was changed to include a line for record the heat of weld wire used.

On the follower card for assembly BBA-622 the Guide Tube Screws were logged as lot 10408, however, the only screws on hand were lot 12405. It appears that lot 12405 screws were used and the follower card entered with an erroneous number.

- (2) A review of records cleaning logs established lots 9701 and 11972 had been cleaned. Lot 6316 was to be recleaned.

F. Exit Interview

The inspector met with management representatives (denoted in paragraph A) at the conclusion of the inspection on June 12, 1980. 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.