

ORGANIZATION: BABCOCK & WILCOX COMPANY
NUCLEAR FUEL SERVICES
LYNCHBURG, VIRGINIA

REPORT NO.: 99900001/83-01	INSPECTION DATE(S) 4/4-8/83	INSPECTION ON-SITE HOURS: 29
CORRESPONDENCE ADDRESS: Babcock & Wilcox Company Nuclear Fuel Services ATTN: Mr. C. W. Pryor, Manager P. O. Box 1260 Lynchburg, VA 24505		
ORGANIZATIONAL CONTACT: Mr. J. Ficor, QA Manager TELEPHONE NUMBER: (804)522-5618		
PRINCIPAL PRODUCT: Nuclear fuel assemblies. NUCLEAR INDUSTRY ACTIVITY: Major nuclear fuel supplier to B&W cores.		
ASSIGNED INSPECTOR: <u>W. M. McNeill</u> <u>5/31/83</u> W. M. McNeill, Reactive & Component Program Section Date (R&CPS)		
OTHER INSPECTOR(S):		
APPROVED BY: <u>I. Barnes</u> <u>6/13/83</u> I. Barnes, Chief, R&CPS Date		
INSPECTION BASES AND SCOPE: A. <u>BASES</u> : 10 CFR Part 50, Appendix B. B. <u>SCOPE</u> : Nonconformances and corrective actions; hydrogen controls; pellet attributes; pellet enrichment and impurities controls; and status of previous inspection findings.		
PLANT SITE APPLICABILITY: No determined applicability. DESIGNATED ORIGINAL Certified By <u>Rheanne Clark</u>		

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A. VIOLATIONS:

None

B. NONCONFORMANCES:

1. Contrary to Criterion V of Appendix B to 10 CFR Part 50 and paragraph 2.6.1 of Section 15 in the Quality Assurance Manual, six steam generator tube sleeves (Serial Nos. J-6-7-28, K-13-7-28, J-13-3-28, J-14-10-28, K-13-1-28, and H-12-1-36) were found in the store room with neither a reject nor a hold tag although Contract Variation Approval Requests Nos. SC-095 and SC-098 had rejected these sleeves.
2. Contrary to Criterion V of Appendix B to 10 CFR Part 50 and paragraph 1.0 of Section 14 in the Quality Assurance Manual, one lot of guide tube upper nuts whose identity was unknown was found without a route card although this lot was at three different machining operations and locations within the shop. As a result, ready determination of the status of the parts could not be accomplished.

C. UNRESOLVED ITEMS:

None

D. STATUS OF PREVIOUS INSPECTION FINDINGS:

(Closed) Nonconformance (82-01): The formal canvass of document recipients has not been performed at least in the last year.

The procedure has been revised to include a form to document the canvassing. The canvassing of the last quarter of 1982 was reviewed. No further significant problems were identified in this area although it was noted that the records of canvassing for the first quarter of 1982 were misfiled and the last quarter was performed behind schedule.

E. OTHER FINDINGS OR COMMENTS:

1. Nonconformances and Corrective Actions - The procedures established for control of nonconformances and corrective actions were reviewed. The status of materials, parts, and assemblies in the shop was inspected. Parts found to be nonconforming were reviewed to verify implementation of the QA program in regard to identification and disposition of

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nonconformances on Component Discrepancy Reports and Contract Variation Approval Requests. The summaries of corrective actions and the corrective action meeting reports were inspected. In this area of the inspection, nonconformance A was identified on the failure to tag rejected steam generator tube sleeves. Babcock & Wilcox (B&W) properly tagged the sleeves in question prior to the end of the inspection. Nonconformance B was identified on the failure to have a route card issued on parts in process. It was noted that manufacturing procedure MA-1207 expanded the QA manual requirement in regard to having route cards accompany parts through the plant.

It was additionally noted that the absence of route cards also could result in the loss of traceability information. B&W issued a route card for the lot of material in question before the end of the inspection.

2. Hydrogen Controls - The hydrogen controls, namely moisture measurements, of AL_2O_3 , B_4C poison pellets were inspected. The drying and testing of a current lot of pellets in production were reviewed. The sampling, analytical method, and use of calibrated equipment were verified. The drying procedure and ovens were inspected for Lot No. I.
3. Pellet Attributes - The vendor supplied data and B&W receiving inspection of the pellets for two current projects were inspected (97H and 20G). The pellet specification and drawing were reviewed and it was verified that design requirements had been checked. The use of approved visual standards, calibrated tools, and compliance to the procedures and specification were verified.
4. Pellet Enrichment and Impurities Controls - The pellet chemistry records and overchecks of the same pellet lots above were inspected. The conformance to specification and procedure requirements was verified. The use of approved procedures by the vendor and the overcheck lab was verified. It was noted that there is a specification requirement on the soluble or free carbon content. The reports by the vendor and the overcheck lab were significantly different. One reported soluble or free carbon at approximately 30% of the specification limit and the other at 5% of the limit. A review of the analytical methods found differences in the test temperatures between the two methods. The lower temperature was associated with the higher results (30% of the limit). The higher temperature yielded raw data that was higher (50% of the limit) than the lower test temperature. The raw data was corrected for the carbon associated with the known boron as B_4C under the assumption that the higher temperature broke down the B_4C and thereby the resultant was lower (5% of the limit). The NRC⁴ inspector questioned the correctness of the test temperatures used. It would

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appear that the lower temperature may be too high or the higher temperature too low or both. This question will be reviewed during a future inspection of the Utility Power Generation Division which approved both of these procedures and wrote the specification.

5. General Information - B&W is expanding its machining, welding, and heat treatment operations at the Commercial Nuclear Fuel Plant. This activity will supplement fuel fabrication from mid 1983 to late 1983. Steam generator tube sleeves are a current product line and incore detectors and quick vent closures for drive mechanisms are planned for the near future.

PERSONS CONTACTED

Company B&W

Dates April 4-8, 1983

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NAME(Please Print)	TITLE(Please Print)	ORGANIZATION(Please Print)
* JOHN FICOR	QA Mgr.	B&W
* RON FLICKER	MET. LAB/ENGINEER	
* KEN HARRIS	INSPECTION SUPER.	
* JACK BROWN	DATA EVALUATION SUPER.	
DICK ALTO	WIR. OPERATIONS MGR.	
* Lyle Lee	Mfg. OPERATION MGR	
* MIKE GUILLE	PRODUCTION ENGS SUPER.	
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C.W. DEANER	FOREMAN	
Bill Tibbs	DATA EVALUATION TECH.	
HUNTER MARSHALL	"	
C E CAMPBELL	FOREMAN	
SAMMY CARTER	"	
* MIKE PINGSTOCK	PURCH. GROUP LEADER	
Henry Jones	Design Eng.	(phone)
Sam Weaver	President	Refractory Owens Inc (phone)
* ATTENDED EXIT MEETINGS		

Inspector McNeilScope/Module Follow Up
 Bucket No. 11-1
 Report No. 11-13-01
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DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
QA-1200	3	DISTRIBUTION OF QAIP MANUFACTURING ENGINEERING DOCUMENTS	-	6
-	9	CANVAS OF RECIPIENT OF MANUFACTURING ENGINEERING DOCUMENTS	-	-
QA 1412	3	NONCONFORMANCES & CORRECTIVE ACTIONS	9/3/80	2
QA 1413	3	CORRECTIVE ACTION	3/24/80	3
QA 822	3	NONCONFORMING MATERIALS, PARTS, OR COMPONENTS	5/21/80	4
QA 1423	3	TAGGING COMPONENTS, PARTS, ASSEMBLIES, & EQUIPMENT	3/14/82	2
	9	CONTRACT VARIATION APPROVAL REQUEST (CVAR)	3/14/82	-
	9	COMPONENT DISCREPANCY REPORTS 2818, 2974	-	-
	9	CONTRACT VARIATION APPROVAL REQUEST 30 098, 095	1/4/83	-
	9	CORRECTIVE ACTION MEETING REPORTS #20, #19	3/3/83	-
	8	CVAR FILE FOR 97H & 50 JOB FILES	-	-
	9	ROUTINGS FOR LOT# NO 13724 & MATERIAL COMPONENT RELEASES	-	-
	9	138410 & CERTIFICATE OF CONFORMANCE	-	-
	9	13837 & STEAM GENERATOR TUBE SELECT REPORT	-	-

Document Types:

1. Drawing
2. Specification
3. Procedure
4. QA Manual

5. Purchase Order
6. Internal Memo
7. Letter
8. Other (Specify-if necessary)
9. Report

Columns:

1. Sequential Item Number
2. Type of Document
3. Date of Document
4. Revision (if applicable)

Inspector

McNeill

Scope/Module BURNABLE POISON PELLETSDOCUMENTS EXAMINED
 97-0001
 Packet No. 1
 Report No. 1139
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1	2	TITLE/SUBJECT	3	4
10049842 08-1139 1139 00001	1	MARK B BURNABLE POISON PELLET Al_2O_3 -B4C	-	0
	2	FUEL SPECIFICATION FOR Al_2O_3 -B4C PELLETS MARK B4C	4-27-82	7
	5	COMMERCIAL INFORMATION SHEETS COONEE 1-3	-	7
83-770235	5	PROCUREMENT AUTHORIZATIONS	4/1/82	-
83-769881-01	5	"	3/7/83	-
21-113134-01	5	APPLICABLE DOCUMENTS LISTS 11255002-03	12/3/82	3
39-113581-01	5	SPECIAL INSTRUCTIONS REV 01	8/23/82	-
08-1204-05	2	FUEL SPECIFICATION BURNABLE POISON ROD ASSEMBLY	7/11/82	05
QC 564	3	RECEIVING INSPECTION Al_2O_3 -B4C BURNABLE POISON PELLETS	8/31/81	11
QC 903	3	Al_2O_3 -B4C BURNABLE POISON PELLET CONTROL PELLET DENSITY DETERMINATION	5/22/80	4
QC 904	3	" " MOISTURE "	5/3/82	3
QA 911	3	" " " EVAL.	8/3/81	6
MA 479	3	BURNABLE POISON ROD FABRICATION	1/18/83	20
MA 1204	3	CRFP MANUFACTURING REVIEW AND APPROVAL OF FUEL ENG. DOCUMENTS	5/25/82	4
MA 1207	3	PREPARATION, APPROVAL, AND RELEASE OF ROUTE CARDS	6/23/82	6

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