

ORGANIZATION: WESTINGHOUSE ELECTRIC CORPORATION
NUCLEAR FUEL DIVISION
PITTSBURGH, PENNSYLVANIA

REPORT NO.: 99900005/84-01	INSPECTION 12/3-7/84 DATE(S): 12/17-18/84	INSPECTION ON-SITE HOURS: 49
CORRESPONDENCE ADDRESS: Westinghouse Electric Corporation Nuclear Fuel Division ATTN: Dr. Richard Slember General Manager Post Office Box 355 Pittsburgh, Pennsylvania 15230 ORGANIZATIONAL CONTACT: Mr. R. Cost, Manager Operations Product Assurance TELEPHONE NUMBER: (412) 374-2359		
PRINCIPAL PRODUCT: Nuclear fuel assemblies. NUCLEAR INDUSTRY ACTIVITY: Nuclear fuel supplier for Westinghouse (W) designed cores.		
ASSIGNED INSPECTOR: <u>R. L. Cilimberg</u> R. L. Cilimberg, Special Projects Inspection Section (SPIS)		<u>5/21/85</u> Date
OTHER INSPECTOR(S): APPROVED BY: <u>J. Craig</u> J. Craig, Chief, SPIS, Vendor Program Branch		<u>5/21/85</u> Date
INSPECTION BASES AND SCOPE: A. <u>BASES</u> : 10 CFR Part 50, Appendix B. B. <u>SCOPE</u> : Manufacturing and special process control including fuel pellet fabrication, fuel rod loading, bundle assembly, and follow-up on previous inspection findings.		
PLANT SITE APPLICABILITY: Ginna 1 (50-244), Turkey Point 4 (50-251), Point Beach 1 (50-266), Surry 2 (50-281), Point Beach 2 (50-301), Cook 1 (50-315), Millstone 2 (50-336), Trojan (50-344), Farley 1 (50-348), Farley 2 (50-364), McGuire 1 (50-369).		

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A. VIOLATIONS:

None.

B. NONCONFORMANCES:

None.

C. UNRESOLVED ITEMS:

None.

D. STATUS OF PREVIOUS INSPECTION FINDINGS:

1. (Closed) Nonconformance (Item A, 82-01): A strap inspection procedure, QCI 933025 was not retained as required by Quality Control Instruction (QCI)-000147, Control and Distribution of QCIs.

All W files reviewed during this inspection were found to be complete and in compliance with QCI-000147 requirements. QCI-000147 was revised in October 15, 1982, to include an instruction to area supervisors that they must verify that inspectors being qualified to perform a particular activity have signed cover sheets for all pertinent QCIs.

2. (Closed) Nonconformance (Item B, 82-01): Operating procedure (OP)-715604 was not in the assigned book in work area 61 (Spider Rework Station) as required by Manufacturing Operating Procedure (MOP)-14. OP-715604 was placed in the assigned book, supervisors were reinstructed, and all work areas reviewed during this inspection were found to be in compliance with MOP-14.

E. OTHER FINDINGS OR COMMENTS:

The inspector reviewed a number of items which are described below and are considered closed.

1. Manufacturing and Special Process Control - Control of the manufacturing of fuel assemblies and special processes was verified and the performance of functions by operators and inspectors was observed to meet the requirements of written procedures and criteria.
2. Posting of 10 CFR Part 21: The September 12, 1983, edition of 10 CFR Part 21 was posted rather than the May 9, 1984, edition. W personnel stated that they believed that the May 9, 1984, edition did not contain any substantive revisions and therefore, the current edition was not posted. The inspector discussed with W personnel the require-

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ment that current copies of 10 CFR Part 21 be posted (10 CFR 21.6). The May 9, 1984, edition of 10 CFR Part 21 was posted prior to the end of the inspection.

3. Damaged Fuel Cladding at Farley Unit No. 1: During the fuel off-loading from cycle 4 at Farley 1 on January 29, 1983, damaged fuel was observed. Subsequent analysis determined that the damage was caused by water jetting which resulted from a 30 psig pressure differential from a faulty flow path. The problem was corrected by the conversion from a downflow system to an upflow system during February 1984.
4. Broken Hold Down Springs at McGuire Unit No. 1: Inspection of the top fuel assemblies at McGuire 1 on March 11, 1983, revealed that a number of hold down springs on burnable poison assemblies were broken. All of the upper head injection springs have been replaced with a new design which eliminates the vibration which was resulting in fatigue failure of the broken hold down springs. Discussions with W personnel indicate that breakage of the newly designed springs has not occurred.
5. Broken Hold Down Springs and End Post Wear at Millstone Unit No. 2: Inspection of top fuel assemblies at Millstone 2 during June 1983, discovered broken hold down springs and galled end posts. Evaluation of the broken springs indicates that cross flow resulted in fatigue failure of one spring per assembly in 15 assemblies because the material exhibited unsatisfactory fatigue properties. The fatigue strength of the new design has been increased by a factor of ten through improved processing and larger springs. The galled end posts were caused by fretting wear between the posts and stop pins. The problem was identified as improper clearance between stop pins and the end posts. The new design features increased clearances to minimize fretting.
6. Clad Defects in One Fuel Assembly at Point Beach Unit No. 2: Higher than normal levels of I-131 in the primary coolant of Point Beach 2 during the Spring 1983 refueling outage prompted an inspection which found through-wall penetrations of the cladding of several fuel rods. The holes in the cladding were caused by fretting wear in a gap between the cladding and the bottom spring clips. W concluded that the gap was the result of misalignment of the rod as it was inserted in the fuel bundle through a guide plate fixture. The assembly procedure has been modified by W to prevent misalignment of rods so the recurrence of this problem is not likely. The modified procedure was reviewed during this inspection.

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7. Fuel Pellets with Improper Diameter and Enrichment at Sequoyah Unit 2: Nineteen fuel rods containing pellets of an improper diameter and enrichment were loaded into fuel assembly P39 and shipped to Sequoyah 2. The problem was discovered by a QC engineer on August 24, 1983, while inspecting records and P39 was not loaded into the reactor. The problem occurred because gamma scan instructions permitted the processing of a faulty rod lot because the defect coding was not entered into the computerized data system to prevent further processing. The gamma scan instructions have been revised and the proper defect coding entered into the data system to ensure that defective rods are rejected at the time of inspection to prevent further processing. Physical barriers were installed between pellet production lines to prevent mixing enrichments. The above corrective actions were reviewed during this inspection.
8. Clad Defects in One Fuel Pin at Salem Unit No. 1: Inspection of a fuel rod at Salem 1 on November 21, 1982, found two holes in the cladding. W evaluation determined that the holes were caused by hydriding. This fuel was manufactured in 1978 when the control on hydrogen was not sufficient to prevent hydriding. The hydrogen specification was revised in 1981 to minimize the chance of hydride failures and reviewed during this inspection.

PERSONS CONTACTED

Company Westinghouse

Dates 12/3 - 12/7/84

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DOCUMENTS EXAMINED

DOCKET NO. 99900005REPORT NO. 84 - 01PAGE 1 OF 1

ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
1	QCD	MKN 909806	-	1/25/84	Rejected Tube Guides from L&S M/C 89 of 101 parts failed dimensional
2	QCD	QCI 920101	43	10/2/84	Weld Radiographic Inspection - Film Reading
3	QCD	QCI 920103	3	5/14/84	UT of 17 X 17 (16 X 16) Fuel Rod Welds - computer
4	QCD	QCI 922101	33	5/15/84	Helium Leak Test
5	QCD	QCI 923103	22	10/29/84	Thru-Wall Inspection - Scanner 3
6	QCD	QCI 923104	0	3/5/84	Passive Gamma Scanning of Fuel Rods
7	QCD	QCI 924101	58	10/1/84	Fuel Rod Dimensional & Visual Inspection <small>Wet Annular Burnout Assembly</small>
8	QCD	QCI 925106	9	4/23/84	Secondary Source WABA, and BqC Pellet Inspection <small>II.C.</small>
9	QCD	QCI 927101	31	4/2/84	Fuel Rod Process Control. <small>while rods were loaded</small>
10	QCD	QCI 928101	10	6/13/83	Helium Leak Test - Equip. Operation
11	QCD	QCI 910101	58	6/28/84	Pellet Inspection - Outline
12	QCD	QCI 910102	32	4/30/84	Density Control
13	QCD	QCI 910210	42	5/15/84	UO ₂ Pellet Hydrogen Sampling and Release Procedure
14	QCD	QCI 910211	30	6/30/84	" " Chemistry and Isotopic Sampling
15	PRO	OP 92-01-02-01	H	10/1/84	Press Pellets (superior to ...)

TYPE OF DOC:

DWG - DRAWING
 SPEC - SPECIFICATION
 PRO - PROCEDURE
 QAM - QA MANUAL
 QCD - QC DOCUMENT
 P.O. - PURCHASE ORDER

LTR - LETTER

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ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
16	PRO	OP 7-03-01 83-01-07-01	H	7/7/83	
17	PRO	OP 83-01-05	F	6/1/84	Final Report
18	PRO	83-01-01	E	5/2/84	" " Repair "
19	"	83-01-01	C	4/3/84	Clean Spring
20	"	"	B	4/1/84	Clean End plugs
21	"	83-01-06	B	2/6/84	Clean End plugs - work "
22	"	83-02-03-5 83-03-01-5	J	4/13/84	Automatic seal welding of Fuel Rod End Plug
23	"	83-03-03-6 83-04-03-7	G	4/11/84	" Birth " " " "
24	QCD	1183-01	-	11/5/84	Approved Vendor List (unclassified - engineering)
25	PO	548-01- -23-01-01		3/10/84	Order for tubing technical and administrative documents
26	SPEC	NFD 31003	H	1/31/80	Requirements for Procurement of Zr tubing
27	PO	548-01- -480-01-01		6/6/84	Master order SPEC NFD 31000
28	QCD	100 100		7/1/84	Procurement of S.S. tubing Supersedes - 31900B 11/12/78
29	AUDIT	100 100 100		7/2/84	Master QA Requirements

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