ORGANIZATION: COMBUSTION ENGINEERING, INC.
NUCLEAR POWER SYSTEMS DIVISION
HEMATITE, MISSOURI

REPORT NO.: 99900102/82-01	INSPECTION DATES: 7/12-15/82	INSPECTION ON-SITE HOURS: 24

CORRESPONDENCE ADDRESS: Combustion Engineering, Inc.
ATTN: Mr. H. V. Lichtenberger
Vice-President Manufacturing
1000 Prospect Hill Road
Windsor, Connecticut 06095

ORGANIZATIONAL CONTACT: Mr. M. R. Thomas, Quality Assurance Manager
TELEPHONE: (203) 688-1911 ext. 5774

PRINCIPAL PRODUCT: Nuclear fuel assemblies and control rod drives.

NUCLEAR INDUSTRY ACTIVITY: Nuclear fuel and control rod drive supplier for CE designed cores.

ASSIGNED INSPECTOR: I. Barnes 8-10-82
for W. M. McNeill, Reactive and Component Program Section (R&CPS) Date

OTHER INSPECTOR(S):

APPROVED BY: I. Barnes 8-10-82
I. Barnes, Chief, R&CPS Date

INSPECTION BASES AND SCOPE:

A. BASES: 10 CFR Part 50, Appendix B.

B. SCOPE: Enrichment and impurity controls; pellet attributes; handling, storage and shipping; and status of previous inspection findings.

PLANT SITE APPLICABILITY: Not identified.

DESIGNATED ORIGINAL
Certified By Rheanne Fouts

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A. VIOLATIONS:

None

B. NONCONFORMANCES:

1. Contrary to Criterion V of Appendix B to 10 CFR Part 50 and Section 2, paragraph 2.6.1 of the QA Manual, resintering testing, identified in Work Orders H-65 and H-66, had not been planned for the required work to be performed.

2. Contrary to Criterion V of Appendix B to 10 CFR Part 50 and Section 7, paragraph 7.2 of the QA Manual, determination of grain size was observed during the inspection as not being executed in accordance with the applicable operation sheet; i.e., different microscope, objective lens, filters, etc., were in use than that required by the operation sheet.

C. UNRESOLVED ITEMS:

None

D. STATUS OF PREVIOUS INSPECTION FINDINGS:

(Closed) Unresolved Item (77-01): The Quality Assurance Manual was found to be out of date.

A revision of the QA Manual has been issued. A review of shop activities found this manual to be implemented with the exceptions noted below.

E. OTHER FINDINGS OR COMMENTS:

1. Enrichment and Impurity Controls - The use of sampling plans to control pellet manufacture was inspected. Compliance to the Work Order and specification chemistry requirements was verified. Administrative controls such as labels, pellet identification, etc., were verified. The use of travelers and Operation Sheets to control manufacturing was inspected and found to follow established procedures. The measures established for material control and identification of the inspection status of pellets were verified.

2. Pellet Attributes - Compliance to the Work Order, drawing and specification requirements was verified. The sampling for density, dimensional, surface and other physical characteristics were inspected and found to follow the written procedures. The controls for rework and nonconformances were verified. The records of inspection and testing of two recent lots were reviewed. The inspection procedures were reviewed and

inspection activities observed. The controls of the sintering process were checked and one nonconformance (B.1 above) on resintering was identified. The Work Order and its referenced specification identified a requirement for resintering testing to be performed. However, the Hematite Plant does not have the capabilities to sinter in the specified atmosphere. No exception had been taken to the Work Order by the Hematite Plant. In the review of the testing of pellet microstructure, a nonconformance (B.2 above) was identified. It appears that the procedure in question has become out-of-date. A general observation of the inspection procedures was that the inspection frequencies were sometimes controlled by memorandum rather than by the procedures. It was further noted that tolerances had not been established in procedures for furnace gas flow rates, cooling temperatures, etc.

3. Handling, Storage and Shipping - The Hematite Plant is pelletizing CE Windsor's plant schedule overload. Normally the Hematite Plant is only a material supplier of UO_2 powder for pelletizing. The pellets manufactured by the Hematite Plant are shipped to the CE Windsor Plant for fuel rod loading. It was established by this inspection that shipping activities were not inspected by QA. This was determined, however, not to be a nonconformance with the established QA Manual and Work Order. Shipping activities were verified as being performed in accordance with manufacturing procedures.

PERSONS CONTACTED

Company Combustion Engineering

Dates July 12-16, 1982

Docket/Report No. 9900102

Inspector McNeill

NAME(Please Print)	TITLE(Please Print)	ORGANIZATION(Please Print)
*Tom SWALLOW	QA MGR.	CE
*Jim Rode	PLANT MGR	
*GRAY UDING	QC ENG	
*B.S. PIGG	LAB SUPER.	
E. GANNON	Doc. CONTROL CUSTODIAN	
* Attended Exit Meeting		

Inspector McNeill

Scope/Module follow-up

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DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
NA	4	QUALITY ASSURANCE MANUAL - HEMATITE PLANT	9/14/81	NA
H66	5	INTER-SHOP ORDER	5/10/82	0
H65	5	" "	4/12/82	1
FMOT-110	2	URANIUM DIOXIDE PELLETS	JULY '75	1
MFG-01-10	3	INTEGRATED MFG AND QC PLAN (IMQP)	1-19-79	04
80	1	FUEL PELLET	8-21-81	04
QC-15-12	3	SAMPLING PLAN FOR UO_2 FUEL PELLET REQUIRE.	3-12-76	01
OS 503	3	PELLET PLANT QC CHECKLIST	9-3-81	1
OS502.1	3	SAMPLING PLAN FOR PROCESS CONTROL	4-15-81	0
.2	3	SAMPLING PLAN FOR PRODUCT CERTIFICATION	"	0
.3	3	RETAINER SAMPLES	5/24/82	1
OS 504.1	3	PELLET GEOMETRIC DENSITY MEASUREMENTS	4-15-81	0
.2	3	PELLET CERTIFICATION	"	"
.3	3	PELLET VISUAL INSPECTION	"	"
505.1	3	OPERATION AND CALIBRATION OF PROFILOMETER	"	"
.2	3	SET UP AND OPERATION OF ROLLER MIKE	"	"

Document Types:
1. Drawing
2. Specification
3. Procedure
4. QA Manual
5. Purchas Order
6. Internal Memo
7. Letter
8. Other (Specify-if necessary)

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

Inspector McNeill

Scope/Module PELLET ARITT

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DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
QS 505.3	3	PELLET PERPENDICULARITY MEASUREMENT	4/15/81	0
.4	"	OPTICAL COMPARATOR	"	"
506	"	CONTROL AND CALIBRATION OF EQUIP, INST & STD.	7/23/81	0
508	"	DOCUMENT CONTROL	9/2/75	1
	9	INSTRUMENTAL CALIBRETION RECORD (VARIOUS-16)		
H-66	9	PRODUCT SAMPLE AND CERTIFICATION PLAN		
	9	PELLE PLANT DAILY CALIBRATION CHECK		
	9	SINTERING OPERATING LOG SHEETS (VARIOUS-5)		
	9	FIRED DENSITY LOG SHEETS (VARIOUS - 5)		
QS 510.12	3	GRAIN SIZE DETERMINATION	2-24-77	1
QS 706.4	3	PACKAGING UO_2 PELLETS (SHIPPING PANS)	12-7-81	0
	9	GRINDING LOG (VARIOUS)		
	9	PRESSING LOG (VARIOUS)		
	9	Certification Package for lots C 328P & C327P		
	9			

Document Types:
1. Drawing
2. Specification
3. Procedure
4. QA Manual
5. Purchas Order
6. Internal Memo
7. Letter
8. Other (Specify-If necessary)
9. REPORTS

Columns:
1. Sequential Item Number
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