

U. S. ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS
REGION I

RO Inspection Report No.: 050-363/73-04

Docket No.: 50-363

Licensee: Jersey Central Power & Light Company

License No.: CPPR-96

260 Cherry Hill Road

Priority: _____

Parsippany, N.J.

Category: A2

Forked River

Location: Combustion Engineering Inc. (CE) Chattanooga, Tenn.

PWR-MW(e) 1070

Type of Licensee: _____

Type of Inspection: Vendor, Announced

Dates of Inspection: August 14-16, 1973

Dates of Previous Inspection: May 22, 1973 Vendor
None this utility

Reporting Inspector: Ross L. Brown
Ross L. Brown, Reactor Inspector

8/27/73
Date

Accompanying Inspectors: _____

_____ Date

_____ Date

Other Accompanying Personnel: _____

A. Taboada, RS-HQ (8/14/73 Only)

Reviewed By: E. M. Howard
E. M. Howard

8/28/73
Date

SUMMARY OF FINDINGS

Enforcement Action

None

Licensee Action on Previously Identified Enforcement Items

Not applicable

Design Changes

CE has changed the design of the tube supports in the steam generators, from a drilled plate to a fabricated egg crate (Details, Paragraph 4).

Other Significant Findings

A. Current Finding

CE has established a new position in the quality engineering section which has required management changes in the quality assurance department (Details, Paragraph 2a).

The CE Quality Assurance Manual will be revised to include the more recent program requirements (Details, Paragraph 2b).

B. Status of Previously Reported Unresolved Items

Not applicable

Management Interview

The inspector conducted a meeting with the following management representatives at the conclusion of the inspection.

Persons Attending

GPU Service Corporation (GPUSC)

B. G. Avers, Manager Quality Assurance

Combustion Engineering, Windsor (CENPD)

R. J. Fitzgerald, QA Representative

B. E. Rittberg, QA Representative

Combustion Engineering, Chattanooga (CE)

R. L. Lumkin, Jr., Manager Quality Assurance
M. W. Reed, Chief Quality Engineer
R. G. Kivett, Lead Quality Engineer

The following items were discussed:

- A. The inspector stated that it appears that CE is experiencing an excessive amount of weld defects in the repair cycles of welding in the steam generators.

The CE management stated that the cause analysis and corrective action program (Details, Paragraph 2c) and the weld control program, indicates a significant reduction in weld defects in the last several months.

- B. The inspector stated that it appears that during the installation of the tube supports in the steam generators, the desired level of cleanliness is not being maintained, and apparently a procedure for cleaning the vessel interior after the support installation does not exist.

The vendor stated that the design change of the supports has made it necessary to perform a considerable amount of work in the vessel during the removal of the old and installation of the new supports and that a procedure to clean the vessel prior to installation of the tubes will be developed and submitted to CENPD and GPUSC for their review and approval (Details, Paragraph 4).

- C. The inspector stated that CE should consider a more precise program for maintaining cleanliness of stainless steel components and/or cladding during shop processing.

The vendor representative stated that CE will review the cleanliness requirements and their shop handling procedures and the necessary corrective action will be taken.

- D. The GPUSC representative stated that his company will place an inspector in residence at the CE plant until the steam generator tubes have been installed.

DETAILS

1. Persons Contacted

GPU Service Corporation (GPUSC)

B. G. Avers, Manager, Quality Assurance

Combustion Engineering (CENPD)

R. J. Fitzgerald, QA Representative

B. E. Rittberg, QA Representative

Combustion Engineering (CE)

R. G. Kivett, Lead Quality Engineer

P. C. Kiefer, Quality Engineer

J. K. Myatt, Quality Engineer

J. G. Rawlings, Chief of Codes/Training Section

B. J. Bates, Quality Engineer

2. General

a. Management Changes

Mr. Rawlings was reassigned as the Chief of Codes/Training Section. This is a new position responsible for providing the Nuclear Component Manufacturing Division with a more cohesive and influential role in shaping all codes and specification requirements, design and coordinate all training programs.

Mr. J. W. Reed has been promoted to Chief of Quality Engineering Section, to replace Mr. Rawlings. Mr. Reed is responsible for all quality engineering functions, other than those assigned to codes/training.

b. Quality Assurance Manual

CE management stated that the manual will be revised prior to the next ASME survey and so it will be more closely in compliance with the requirements of 10 CFR 50, Appendix B.

c. Cause Analysis/Corrective Action

The inspector reviewed the procedure for this activity and the data being supplied to assist in this function. The procedure requires the production department to record the weld number, weld procedure, welder(s), welding machine, welding electrode type and heat number.

The nondestructive testing department (radiography) supplies defect information for all welds.

The information is utilized to establish cause, forecast trends and recommend corrective action.

The responsible quality engineer conducts daily audits to assure conformance with the program requirements.

d. Component Completion Dates

The anticipated completion dates for the Forked River components are as follows:

- (1) Reactor Pressure Vessel - May, 1974
- (2) Pressurizer - November, 1974
- (3) Steam Generators - November and December, 1974
- (4) Piping - March, 1975

3. Record Review

The inspection included an examination of the following records, which were selected at random and reviewed in detail to determine: (1) that the materials utilized were in conformance with the codes and specification requirements; (2) if the vendor was implementing his shop procedures; (3) if mandatory inspection hold points were being observed; (4) if inspection results were documented by qualified personnel; and, (5) if the established quality programs was being adhered to throughout all activities relating to the fabrication and examination of the reactor pressure vessel and steam generators.

- a. Material test reports, which included the chemical characteristics, physical properties (Charpy "V" notch and drop weights) and heat treatment of the vessel flange, outlet nozzles, and inlet nozzles in the reactor pressure vessel.
- b. The shop travelers, weld information records, and rejection notices for the nozzles (inlet and outlet) to shell welds of the reactor pressure vessel.
- c. Material test reports for the steam generators Units 1 and 2; stay ring forgings; stay cylinder forgings; primary outlet nozzle forgings; primary inlet nozzle forgings; and the high pressure heat torus plates.

d. The shop travelers, weld information, rejection notices, and selected nondestructive examination records for the following high pressure head assemblies:

- (1) Head torus, long seams
- (2) Stay ring to torus
- (3) Primary inlet and outlet nozzles to head
- (4) Torus to tube sheet extension circumferential weld

The inspector identified no violations. It was found that, in each case, the records were traceable to the identified assemblies, and had been dated and signed off by the responsible personnel. Where deviations or defects were identified on the shop travelers which were reviewed, the repairs were accomplished in accordance with a repair procedure, Inspections were verified to have been made and detail entries recorded by the cognizant inspectors.

4. Design Change

CE has changed the steam generator tube supports from a drilled plate to a fabricated egg crate design. This had necessitated the removal of the original plates and installation of the new supports, which has required cutting, welding, grinding, etc. inside the vessel. These operations have created a problem in maintaining the required cleanliness level.

The vendor stated that CE will develop the cleaning procedure for use prior to tubing installation. The procedure will include cleaning techniques, evaluations, and acceptance criteria.

The procedure will be submitted to CENPD and GPUSC for their approval.

MEMO ROUTE SLIP

Form AEC-93 (Rev. May 14, 1947) AECM 0240

See me about this.

For concurrence.

For action.

Note and return.

For signature.

For information.

TO (Name and unit) RO Chief, Field Support & Enf Br, HQ RO:HQ (5) DR Central Files RO Files Central Mail and Files	INITIALS DATE	REMARKS RO INSPECTION REPORT NO. 50-363-73-04 JERSEY CENTRAL POWER & LIGHT COMPANY FORKED RIVER
TO (Name and unit) Regulatory Standards (3) Directorate of Licensing (13) RO Directors (4)	INITIALS DATE	REMARKS The attached report is being forwarded for information. Distribution to PDR, Local PDR, NSIC, DTIE and state representatives will be made after proprietary review
TO (Name and unit)	INITIALS DATE	REMARKS is completed by the licensee.
FROM (Name and unit) <i>E. Morris Howard</i> <i>RO: Alan Howard</i>	REMARKS	
PHONE NO. 278	DATE 8/29/73	

USE OTHER SIDE FOR ADDITIONAL REMARKS

GPO : 1971 O - 445-469

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