

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

Report No. 99900033/80-01

Program No. 51300

Company: Westinghouse Electric Corporation  
Electro Mechanical Division  
Cheswick Avenue  
Cheswick, Pennsylvania 15024

Inspection Conducted: April 7-11, 1980

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

4/18/80  
Date

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

4/18/80  
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Summary

Inspection conducted April 7-11, 1980 (99900033/80-01)

Areas Inspected: Implementation of Topical Report including design verification; cleaning; testing of completed products; and action on previous inspection findings. The inspection involved thirty (30) inspector-hours on site by one (1) NRC inspector.

Results: In the four (4) areas inspected, no apparent deviations or unresolved items were identified in one (1) area. The following four (4) deviations and one (1) unresolved item were identified.

Deviations: Manufacturing Process Control - Inspection Control Cards were not filled out completely and accurately as required by the Engineering Instruction Manual and the Topical Report. (See Notice of Deviation, Item A); Cleaning - Cleaning is not addressed as a special process as required by the Topical Report. (See Notice of Deviation, Item B); Cleaning-Water pH requirements for testing were not identified in the water test procedure as required by the QA Manual and the Topical Report. (See Notice of Deviation, Item C); Cleaning - ANSI N45.2.2 was not complied with as required by the Process Specification and the Topical Report.

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Unresolved Item: Testing of Completed Products - Westinghouse will have to perform the necessary calculations as required by NB3226(d) to assure no over pressurization of Control Rod Drive Mechanisms. (See Details, paragraph E.3.b)

DETAILS SECTIONA. Persons Contacted

R. A. Asselta, QA Engineer  
 \*F. R. Bakos, General Manager  
 J. A. Drake, Design Engineer  
 M. H. Gerken, Test Engineer  
 \*M. L. Horseman, QA Engineering  
 J. A. Lowrey, Quality Control Operations Manager  
 F. Meledandri, Task Force Manager  
 W. Meyers, Buyer  
 \*J. F. Phillips, Product Assurance Manager  
 R. F. Pfeifer, Principal Engineer  
 B. R. Reed, Design Engineer  
 D. E. Sisca, Test Engineer  
 \*J. C. Trybalski, Authorized Nuclear Inspector

\*Denotes those attending the Exit Interview.

B. Action on Previous Inspection Findings

(Closed) Deviation (Report No. 80-01): Routings did not include certain inspection requirements. A new system of identification of inspection requirements has been established and implementation started. The new system is defined in EIM#50. In course of close out of this deviation the following was identified.

Deviation: See Notice of Deviation, Item A.

Comment:

Westinghouse took immediate corrective action on the particular lots in question. Lots were inspected and nonconformances documented on MRRs used for repairs, and ECTs, used for rework, were issued. The IC cards were corrected for the quantities and the missing parts identified. The missing operation was performed and logged. It appears that the failure to log MRRs and ECTs is because in the case where operators are identifying nonconformances, that MRRs and ECTs are not issued in a timely manner.

C. Design Verification1. Objectives

The objectives of this area of the inspection were to verify that these activities were controlled in accordance with the QA Manual and applicable NRC and ASME Code requirements:

- a. To ascertain that procedures have been prepared and approved to prescribe a system for design verification which is consistent with the commitments of the Quality Assurance (QA) Programs of the Vendor.
- b. To determine that the design verification procedures are properly and effectively implemented by the vendor.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of the Quality Assurance Program Manual, Revision 1, Sections 3, Design Control and 4 Contract Control which established the general requirements for design control.
- b. Review of procedures Design Verification, EPM #9, Revision 0, and Design Review, EDI#12, Revision 14, which established the specific requirements of design control.
- c. Review of a Shop Order for a 93A1 model Reactor Coolant Pump, its Engineering Specifications 677188, Revision 4 and 952082, Revision 4 and its associated Process Specification which established the design requirements.
- d. Inspection of Engineering Memorandums, Model 93A1 Reactor Coolant Pump Final Design Review, EM 5149, Dynamic Seismic Analysis of the Model 93A1 Reactor Coolant Pumps, EM 5150, Analysis of 93A/94A1 Casing Large Feet Using Umbrella Loads, EM 4959, and the 93A1 Reactor Coolant Pump Generic Pressure Boundary Component Stress Analysis, EM 4860. This inspection was to verify implementation of the above procedures.

3. Findings

- a. Deviations  
None
- b. Unresolved Items  
None

D. Cleaning

1. Objectives

The objectives of this area of the inspection were to verify that these activities were controlled in accordance with the QA Manual and applicable NRC and ASME Code requirements;

- a. To verify that special processes other than welding, nondestructive testing and heat treating are controlled and accomplished by qualified personnel using qualified procedures in accordance with applicable regulatory, code and contract requirements.
- b. To verify that the above system is effective in assuring product quality.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of the Quality Assurance Program Manual, Revision 1, Sections 5, Manufacturing, Inspection and Test Instructions; and 8, Manufacturing Control which established the general requirements for control of manufacturing processes.
- b. Review of Nuclear Valve Cleaning Procedure, 83311PM, Revision C; Valve Test Procedure, VTP #2, Revision A; and Periodic Water Purity Sampling, TP #3, Revision F, which established specific requirements for cleaning.
- c. Review of Process Specification, Cleaning, Packaging Specification for Commercial Controlled Leakage Reactor Coolant Pumps, P.S. 595698 and Packaging Nuclear Components and Spare Parts for Shipments, P.S. 85310 QA, which establish design requirements.
- d. Inspection of cleaning operations on the shop floor in valve manufacturing and verification of the above procedures.

3. Findings

a. Deviations

See Notice of Deviation, Items B, C, and D.

b. Unresolved Items

None.

c. Comments

Water pH measurements are being taken for information at the present time. In the past a pH meter was used to control pH but it has been taken out of service. However, the procedure on sampling and testing water for valves failed to contain all the acceptance criteria for grades A and B water.

## E. Testing of Completed Products

### 1. Objectives

The objectives of this area of the inspection were to verify that these activities were controlled in accordance with the QA Manual and applicable NRC and ASME Code requirements:

- a. To verify that products are assembled in accordance with approved procedures and that all ancillary materials comply with approved specifications.
- b. To verify that hydrostatic functional tests of products are performed in accordance with approved test documents.

### 2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of the Quality Assurance Program Manual, Revision 1; Sections 5, Manufacturing, Inspection, and Test Instructions; 11, In-Process and Final Inspection and Testing which established the general requirements for testing of products.
- b. Review of the following specifications and procedure which established the specific requirements of test controls:
 

Test Specification 788457, Revision V,  
Test Specification 786099, Revision K,  
Valve Test Procedure, #7, Revision E.
- c. Inspection of the hydrostatic testing of valves and Control Rod Drive Mechanisms and verification of implementation of the above procedures.

### 3. Findings

#### a. Deviations

None.

#### b. Unresolved Item

Control Rod Drive Mechanisms are tested at 4100 psig and its design pressure 2500 psig. NB-3226 requires that the general primary membrane stress intensity be less than 90% of the tabulated yield strength and the primary membrane plus bending stress intensity shall not exceed 135% of the tabulated yield strength. This requirement applies if the test pressure exceeds 1.25 times the design pressure by 6%. Westinghouse design engineering will document this calculation. A rough calculation established the above to be approximately 4195 psig. The procedure provided a maximum test pressure of 4175 psig.

F. Exit Interview

The inspector met with management representatives (denoted in paragraph A) at the conclusion of the inspection on April 11, 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.