ORGANIZATION: WESTINGHOUSE ELECTRIC CORPORATION
NUCLEAR TECHNOLOGY DIVISION
MONROEVILLE, PENNSYLVANIA

REPORT NO.: 99900404/82-02	INSPECTION DATE(S) 10/25-29/82	INSPECTION ON-SITE HOURS: 102

CORRESPONDENCE ADDRESS: Westinghouse Electric Corporation
Nuclear Technology Division
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Pittsburg, PA 51230

ORGANIZATIONAL CONTACT: Mr. P. T. McManus, Manager, Product Assurance
TELEPHONE NUMBER: (412) 273-7988

PRINCIPAL PRODUCT: Nuclear Steam Supply Systems

NUCLEAR INDUSTRY ACTIVITY: The Nuclear Technology Division of Westinghouse Electric Corporation (W-NTD) employs approximately 2,200 people that are assigned to domestic nuclear power plant activities.

ASSIGNED INSPECTOR: R. H. Brickley
R. H. Brickley, Reactor Systems Section (RSS) Date 12/10/82

OTHER INSPECTOR(S): (See paragraph E.1)

APPROVED BY: C. J. Hale
C. J. Hale, Chief, RSS Date 12/10/82

INSPECTION BASES AND SCOPE:

A. BASES: 10 CFR Part 21; 10 CFR Part 50, Appendix B; and Topical Report No. WCAP-8370.

B. SCOPE: Inspection of the status of previous inspection findings and the following: (1) a request from the Office of Nuclear Reactor Regulation (NRR) for participation in a technical and QA programmatic audit of the generic safety parameter display system, and (2) a Westinghouse report to the Office of Inspection and Enforcement concerning reactor cooling system wide range pressure transmitter inaccuracies.

PLANT SITE APPLICABILITY:

Not identified.

DESIGNATED ORIGINAL
Certified By Rheanne Clark

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A. VIOLATIONS:

None

B. NONCONFORMANCES:

None

C. UNRESOLVED ITEMS:

It was not clear whether inputs from the instrumentation and controls channel list, control and electrical system standard, or some other component functional requirements document are required in the component specification for the reactor cooling system wide range pressure transmitter.

D. STATUS OF PREVIOUS INSPECTION FINDINGS:

(Closed) Nonconformance (82-01): W-NTD had not performed a formal evaluation each year or conducted an audit of Anchor Darling every 3 years to maintain them as a qualified supplier nor had they otherwise requalified them prior to Anchor Darling performing modifications to valves for Watts Bar. The last audit of Anchor Darling was in March 1975, and the last supplier performance evaluation was in November 1977.

The NRC inspector verified the corrective action and preventive measures committed in the Westinghouse letter dated August 23, 1982; i.e., Procedure WRD-OPR-3.4, "Field Change Notice Processing System" was revised on August 12, 1981, to require that a purchase order or purchase order change be issued to a vendor when a field change notice requires work to be done at a vendor facility. This will require the cognizant quality engineer to review the purchase order or purchase order change and verify that the vendor is on the qualified supplier list. However, the W-NTD commitment to a formal evaluation or audit of a supplier on an annual basis was not made until September 1977; therefore, a nonconformance did not exist.

E. OTHER FINDINGS OR COMMENTS:

1. Safety Parameter Display System (SPDS) - This item resulted from a request from the NRR for participation in a technical and QA programmatic audit of the Westinghouse generic SPDS activities. The NRR audit team was composed of the following personnel:

L. Beltracchi, Human Factors Engineering Branch (HFEB)
R. Licciardo, Reactor Systems Branch (RSB)
G. Lapinsky, HFEB
J. Joyce, Instrumentation & Controls Systems Branch

The members of the team reviewed the documentation available at this time in the system development consisting of the design basis and functional requirements documents; human factors evaluation and the technical support complex, supplement 1 reports; and the visual momentum paper. The results of this audit were discussed with the Westinghouse staff and will be documented by the NRR staff in a report which will be transmitted to Westinghouse.

The review of available documentation and discussions with the Westinghouse staff disclosed that records of the design process that would be required by Topical Report WCAP-8370 were not developed for the design basis and functional requirements documents. Reportedly, these documents were developed in accordance with the requirements of WCAP-8370; however, the formal documentation to support these statements was not completed. The human factors evaluation process was well documented and appeared to be in accordance with QA program requirements.

It should be noted that the SPDS has not been classified by the NRC as a safety system (Class 1E) and, therefore, would not be subject to the detailed requirements of the WCAP-8370 program. The applicability of the WCAP-8370 program to the design and development of the SPDS remains under evaluation by NRR and will be a subject to future discussions with the Westinghouse staff.

There were no nonconformances or unresolved items identified.

2. Reactor Cooling System (RCS) Wide Range Pressure Transmitter Inaccuracies - This item concerns a report by Westinghouse to the Office of Inspection and Enforcement that recent qualification tests in a post-accident, high energy line break environment have indicated that the wide range pressure measurement instrument channels exhibit ambiguities in their accuracy which could result in inappropriate operator actions. The Office of Inspection and Enforcement notified applicable licensees of this condition via IE Information Notice No. 82-11, dated April 9, 1982.

The examination of the Safety Review Committee files, specifications, standards, functional requirements, and applicable procedures disclosed the following:

a. The instrument and controls channel list specified that the wide range pressure transmitter (WRPT) must have a ±30 psi accuracy.

b. The control and electrical system standard specified that the WRPT must have a specified reference accuracy of ±0.5%, an accuracy of ±10% under thermal shock and temperatures greater than 300° F, an accuracy of ±7.5% at temperatures between 150° and 300° F, and an accuracy of ±5% at temperatures greater than room temperature.

c. Revisions 1 and 2 of the equipment specification specified that the WRPT must have specified reference accuracy of ±0.5%, an accuracy of ±10% at temperatures between 130° and 280° F, and an accuracy of ±25% under post-accident conditions.

d. Revision 3 to the equipment specification changed the requirements to a specified reference accuracy of ±0.5% and ±5% under post-accident conditions.

e. The accuracy of the existing WRPTs in all Westinghouse plants, under post-accident conditions, is ± 13% of span (3000 psig) or ± 390 psig.

It could not be determined whether the accuracy requirements of the instrumentation and controls channel list, the control and electrical system standard, or some other components requirements document was applicable to the WRPT equipment specification. This matter is considered unresolved (see C. above).

3. Computer Code Errors (Ref. 99900404/82-01, paragraph D.4) - Westinghouse had initiated an investigation of main frame A computer malfunctions and its possible effects on safety-related codes that were run.

Westinghouse has completed the investigation of the computer files that were created during the week when the main frame A (MFA) hardware problem occurred (March 9, 1979 through March 19, 1979) and the permanent files created since January 1, 1978 (those currently used files which were created earlier). The investigation involved 375 comparison runs, including 190 safety-related codes. No additional errors were identified; therefore, this item is considered closed.

B-1
Rev. 3-12-75

ATTENDANCE LIST

COMPANY: WESTINGHOUSE DOCKET NO. 99900404

Date: 10/29/82 ☐ Pre-Inspection Conference ☒ Post Inspection Conference

NAME (Please Print)	TITLE (Please Print)	ORGANIZATION (Please Print)
R. H. Brickley	Reactor Engineer	NRC IE-IV
H. H. Brunko	PI & DA Mgr.	PI & DA - NTD
M. H. Shannon	Senior Quality Engineer	NTD - PI & DA
E. B. Hyland	Product Assurance Mgr	NSLD/ITTC
J. W. Miller	Senior Eng.	NTD / I&CSC
Philip T. McManus	MGR., Design Assurance Systems	Nuclear Technology Division Product Integrity & Design Assurance
M. J. Asztalos	Sr. Engr.	Fluid Systems Design
R. A. Wiesemann	Mgr Reg. & Leg. Affairs	NTD - Nuclear Safety

PERSONS CONTACTED

Company Westinghouse

Dates 10/25-29/82

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NAME(Please Print)	TITLE(Please Print)	ORGANIZATION(Please Print)
T. G. SHULTZ	MANAGER - COMPUTER SYS. ENGINEERING	NSID
J. MCINERNEY	SR. ENGINEER	W NTD/NS/MESC
E. C. ARNOLD	MANAGER - REACTOR COOLANT SYSTEMS -	NTD

Inspector R. H. Brickley

Scope/Module TRCS Wide Range Pressure Measurement Insts.

DOCUMENTS EXAMINED

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1	2	TITLE/SUBJECT	3	4
1	8	Safety Review Committee file #ID 82-189 (TRCS Wide Range Pressure Measurement)	Various	Various
2	8	I & C Channel List - Standard Plant Models 212, 312, & 412	—	—
3	3	NTD-OPP-4A (NTD/SOD PDD Design Interfaces)	7/24/81	2
4	3	WRD-OPR-3.8 (Component Functional Requirements)	8/12/81	2
5	3	WRD-OPR-3.9 (Component Specifications)	8/12/81	2
6	2	No. 953328 (Qualification (Design Verification) of Pressure & Differential Pressure Transmitters, Quality Group A, Safety Class 1E for in Containment Application)	8/3/77 3/27/78 10/30/80	1 2 3
7	8	Change Control #5962	—	—
8	8	Control & Electrical System Standard #2.30 (Electronic Pressure Transmitter)	9/24/74	—
9	8	Post Accident Monitoring System Functional Requirements	11/15/78	—

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 R.H. Brickley

Scope/Module SPDS

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DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
1	8	SA&I-ESI-079 (Functional Requirements - Technical Support Complex)	7/14/81	1
2	8	SA&I-ESI-079 (Design Basis Plant Safety Status Display)	7/10/82	1
3	8	Research Report 81-1057-CONRM (Human Factors Evaluation of the Technical Support Display Systems)	1/12/82	1

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