

ORGANIZATION: WESTINGHOUSE ELECTRIC CORPORATION
NUCLEAR TECHNOLOGY DIVISION
MONROEVILLE, PENNSYLVANIA

REPORT NO: 99900404/82-01	INSPECTION DATE(S) 6/21-25/82	INSPECTION ON-SITE HOURS: 54
CORRESPONDENCE ADDRESS: Westinghouse Electric Corporation Nuclear Technology Division ATTN: R. J. Slember, General Manager P. O. Box 355 Pittsburgh, Pennsylvania 51230		
ORGANIZATION CONTACT: 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) employs approximately 2,212 people, 100% of which are assigned to domestic nuclear power plant activities.		
ASSIGNED INSPECTOR: <u>R. H. Brickley</u> R. H. Brickley, Reactor Systems Section (RSS)		<u>8/10/82</u> Date
OTHER INSPECTOR(S): P. H. Harrell, RSS		
APPROVED BY: <u>C. J. Hale</u> C. J. Hale, Chief, RSS		<u>8/10/82</u> Date
INSPECTION BASES AND SCOPE:		
A. <u>BASES</u> : 10 CFR Part 50, Appendix B and Topical Report No. WCAP-8370.		
B. <u>SCOPE</u> : Inspection made in response to the following: (1) a Preliminary Notice from Pacific Gas & Electric Company (Diablo Canyon) concerning an apparent failure by W to forward to licensees revisions of a Pacific Pump Company instruction manual; (2) a request from NRC:RII concerning an apparent failure by W to perform audits of suppliers at least every 3 years; (3) a (cont. on next page.)		
PLANT SITE APPLICABILITY:		
Docket Nos. 50-275, 50-323, 50-390, and 50-391.		
DESIGNATED ORIGINAL Certified By <u>Bheanne J. [Signature]</u>		

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<p>B. <u>SCOPE:</u> Cont. construction deficiency report from NRC:RII concerning incorrect values in computer code UHISATAN provided by W to TVA for use in calculating peak clad temperatures following a potential accident at Watts Bar; and (4) a notification to the NRC Office of Inspection and Enforcement that under certain conditions stipulated by Babcock & Wilcox, W designs may provide inadequate core cooling. In addition, supplier performance and verification of supplier activities were inspected.</p> <p>A. <u>VIOLATIONS:</u> None</p> <p>B. <u>NONCONFORMANCES:</u> Contrary to commitments contained in Table 17-1 of WCAP-8370, Revision 9A, W 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 in November 1977.</p> <p>C. <u>UNRESOLVED ITEMS:</u> None</p> <p>D. <u>OTHER FINDINGS OR COMMENTS:</u> 1. Control of Supplier Manual Revisions - An NRC Preliminary Notification dated October 18, 1981, (PNO-V-81-60) reported a failure of a safety injection pump at Diablo Canyon during surveillance testing. Inspection revealed the pump wear ring had seized the shaft. Reportedly, the pump manufacturer (Pacific Pump) had issued a change to their instruction manual for this pump about January 1981, which corrected this problem. This change was transmitted to Pacific Pump customers, W in this case, but W apparently did not forward the change to the licensee. A review of the records maintained by W on this item disclosed: (1) Procurement Advisory Release (PAR) No. 38, issued by W to Pacific Pump on November 2, 1981, gave an approval status code of I indicating the subject change had been received for information; (2) the change to the Operations & Maintenance Instruction (Sections 6E-6 and 6E-9) recommended replacement of the impeller nut set screws with Loctite 242 the next time the pumps are disassembled for service or</p>		

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<p>repair; and (3) the subject change had been transmitted in November 1981, to all affected licensees; i.e., D. C. Cook 1 and 2, Zion 1 and 2, Diablo Canyon 1 and 2, Salem 1 and 2, Sequoyah 1 and 2, and Trojan 1.</p> <p>There were no nonconformances or unresolved items identified.</p> <p>2. Failure to Perform Triennial Audits of a Supplier - This item was identified by the NRC Region II Resident Inspector at Watts Bar. TVA had contracted Anchor Darling, through Westinghouse, to modify upper head injection isolation valves. During a Region II inspection of TVA's QA procurement services, the available records indicated that <u>W</u> had not conducted triennial audits of Anchor Darling per their commitment in their topical report WCAP-8370, Revision 9A, Table 17-1.</p> <p>The inspectors reviewed the Water Reactor Division (WRD) Policy & Procedures (PAP) Manual and Product Assurance Procedures Manual, qualified supplier list, supplier performance evaluations, and supplier audits. Those records maintained on the following suppliers were reviewed: Anchor Darling, Speedway, Southwest Fabricators, Pacific Pump, Ingersoll-Rand, Joseph Oat, and IIT-Barton.</p> <p>The review of Anchor Darling records disclosed that the last audit was conducted on February 11-12, 1975, and the last supplier performance evaluation on November 16, 1977. The supplier performance evaluation stated that all equipment had been shipped, no new orders placed or anticipated, and that an audit was required prior to placement of new orders or activities on equipment returned from sites. Anchor Darling was not listed on the latest <u>W</u> qualified supplier list. The nonconformance, identified in B above, is a result of this review. Annual supplier performance evaluations and triennial audits of the remaining six suppliers had been performed as committed for the time period examined.</p> <p>3. Core Cooling Concerns - The NRC's Office of Inspection and Enforcement was notified by Babcock & Wilcox (B&W) on January 12, 1982, that provisions included in guidelines provided to B&W's operating reactor owners on inadequate core cooling that, if followed, could result in inadequate core cooling. If, during a small LOCA, the Engineered Safety Features Actuation System is automatically actuated due to low reactor coolant system pressure, and inadequate core cooling conditions (superheat) are incorrectly indicated due to instrument errors, then the operator, by following the guidelines, would allow the reactor coolant pumps to continue to run. But in actuality, due</p>		

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to instrument errors, the reactor coolant system could be at saturated conditions, rather than superheated. Subsequent loss of the pumps could occur prior to the high pressure injection system filling the RCS.

Thus, if the operator were misled by instrument errors and if the pumps were subsequently lost, unacceptable core cooling conditions could be created. B&W had notified their licensees of the measures needed to correct this situation.

The objective of this inspection was to determine if W was aware of the B&W concern and, if so, had they reviewed their guidelines with respect to this concern. The inspector reviewed the results of a W study which concluded that the concerns expressed by B&W are not applicable to the guidelines prepared by W for their customers. This conclusion was based on recommended operator actions which are prompted by a set of parameters which include, but are not limited to, coolant thermodynamic state. For all criteria, instrument uncertainties were included in the development of action level values.

4. Error in the Computer Code UHISATAN - This item was reported to NRC Region II via a CDR from the licensee (TVA) and concerns erroneous output data from the W computer code UHISATAN. This code is used to produce data for calculating peak clad temperatures during a large break LOCA.

The inspector reviewed applicable procedures and the records maintained by the Safety Review Committee on this item (PI-81-145). This review disclosed that:

- a. This problem was created by a hardware malfunction that was detected during routine preventive maintenance of the A-system computer on or about March 21, 1979.
- b. System users were notified of this malfunction on March 21, 1979, and were advised to check the accuracy of their results.
- c. Reportedly, the responsible engineer reviewed the results of the Watts Bar run, compared the data with those of similar runs, and concluded that the results were correct.
- d. A subsequent change in code input data initiated a rerun. This time the code was run on the B-system computer and gave significantly different results. Further investigation disclosed that the A-system (MFA) and B-system (MFB) versions of the most recent cycle of the configurations code did not produce identical results.

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When the absolute version of the code on MFA was produced (3/15/79), unreproducible computer hardware caused the computer (FTN4.1) to produce errors in the absolute file version of the code during conversion from Fortran to machine language.

- e. The rerun of the code for Watts Bar resulted in an increase in the highest peak clad temperature from 2095° to 2171° F.
- f. The W investigation of this problem involves some 250 analyses that were run on MFA from January 1978 to the present. At the time of this inspection, 200 of these had been checked with the only identified errors being those in UHISATAN. All ECCS codes that were run during the period in question have been checked.

A review of the status of the W investigation of the effect of the computer malfunction on safety-related codes will be conducted during a future inspection.

There were no nonconformances or unresolved items identified.

- 5. Supplier Performance - Applicable procedures from the PAP Manual were reviewed to determine that procedures had been prepared and approved by W that prescribe a system for evaluation of supplier performance which is consistent with the commitments in Topical Report No. WCAP-8370. The records maintained on six items procured for Comanche Peak from six suppliers (Speedway, Southwest Fabricators, Pacific Pump, Ingersoll-Rand, Joseph Oat, and ITT-Barton) were reviewed to determine that the evaluation of supplier performance procedures had been properly and effectively implemented.

There were no nonconformances or unresolved items identified.

- 6. Verification Activities - Applicable procedures from the PAP Manual were reviewed to determine that procedures had been prepared and approved by W that prescribe a system for verification activities which is consistent with commitments in Topical Report No. WCAP-8370. The records maintained on six items procured for Comanche Peak from the six suppliers identified in paragraph 5 were reviewed to determine that the procedures for verification activities had been properly and effectively implemented. Qualification of surveillance personnel will be reviewed during a future inspection.

There were no nonconformances or unresolved items identified.

Scope/Module REVISION to S.I. PUMP
INSTRUCTION MANUALDOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
1	7	EP-SA-34987 (DIABLO CANYON SITE SAFETY INJECTION PUMP)	11/12/81	NA
2	8	PROCUREMENT ADVISORY RELEASE (PAR) #38 (OPERATIONS & MAINTENANCE INSTRUCTIONS 2348) to PACIFIC PUMP	11/2/81	
3	8	DOCUMENT Applicability Form	10/26/81	
4	3	WRD-OPR-4.0 (PROCUREMENT DOCUMENT CONTROL)	3/20/81	2
5	3	WRD-OPR-7.0 (CONTROL OF PURCHASED MATERIAL/EQUIPMENT, & SERVICES)	1/19/82	3
6	4	NTD/SOD DESIGN CONTROL MANUAL		
7	3	NTD-DPP-2.8 (PROCUREMENT CONTROL)	7/24/81	0
8	3	NTD-DPP-7.0 (DOCUMENT CONTROL)	7/24/81	1

Document Types:

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

Columns:

- | |
|-----------------------------|
| 1. Sequential Item Number |
| 2. Type of Document |
| 3. Date of Document |
| 4. Revision (If applicable) |

Scope/Module UHSATAN Computer Code
ERRORDOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
1	6	SE-OSA-305 (PARTIAL EVALUATION MFA SAFETY-RELATED CALCULATIONS)	1/27/82	NA
2	6	SED-APM-D16 (MFA SAFETY-RELATED CALCULATIONS)	5/7/82	NA
3	6	NS-LT-9725 (MFA SAFETY-RELATED CALCULATIONS)	1/8/82	NA
4	6	ECS-5301 (SATAN RESULT DIFFERENCES)	12/14/81	NA
5	4	SAFEGUARDS ENGINEERING INSTRUCTION & GUIDANCE MANUAL (SEISM)	—	—
6	3	NS-DE-IG-14 (NRC REQUIREMENTS)	—	0
7	3	NS-DE-IG-15 (REPORTING OF POTENTIAL SAFETY ISSUES)	—	0
8	4	WRD Policy & PROCEDURES MANUAL (P&PM)	—	—
9	3	WRD-OPR-3.2 (VERIFICATION OF COMPUTER PROGRAMS USED IN ENGINEERING ANALYSIS, DESIGN OR SAFETY ANALYSIS)	3/20/81	1
10	3	WRD-OPR-3.3 (CONFIGURATION CONTROL OF COMPUTER PROGRAMS)	3/20/81	1
11	6	MEMO #205 (A-SYSTEM Divide ERROR)	3/21/79	NA

Document Types:

- | | |
|------------------|---------------------------------|
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Scope/Module TRIENNIAL Audit of Anchor Darling
SUPPLIER PERFORMANCE
VERIFICATION ACTIVITIES

DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
1	3	NTD-DPP-2.8 ^A (Procurement Control)	7/24/81	0
2	3	NTD-DPP-2D (Document Control)	7/24/81	1
3	3	WRD-OPR-12.0 (Control of Measuring & Test Equipment)	3/20/81	1
4	3	WRD-OPR-10.0 (Inspection)	3/20/81	2
5	3	Product Assurance Procedure (PAP)-2.1 (Qualification Requirements for Audit Personnel)	7/1/81	2
6	3	PAP-2.2 (Qualification of Surveillance Personnel)	7/1/81	3
7	3	PAP-2.3 (Qualification & Training & Certification of Personnel in NDE)	6/9/82	3
8	3	PAP-3.0 (Supplier Evaluation & Approval)	6/9/80	4
9	3	PAP-3.1 (Supplier QA System Requirements)	7/1/81	2
10	3	PAP-3.2 (Quality Procurement Specification)	7/1/81	2
11	3	PAP-3.3 (Notification of Hold/Notification Points)	7/1/81	1
12	3	PAP-3.4 (Supplier Surveillance)	7/1/81	2
13	3	PAP-3.6 (Quality Releases)	7/1/81	2
14	3	PAP-3.7 (Supplier Quality Releases)	7/1/81	1
15	3	PAP-3.8 (Supplier Corrective Action Notice)	7/1/81	1

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Scope/Module TRIENNIAL Audits of Anchor Darling Supplier PERFORMANCE Verification Activities

DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
16	3	PAP-3.9 (SURVEILLANCE & TRIP/CONFERENCE Reports)	7/1/81	1
17	3	PAP-4.4 (CORRECTIVE ACTION NOTICE)	7/1/81	1
18	5	PO #546-CPK-27112-BN (CROMI GEOMETRIC Support Assy)	10/19/77	0
19	8	RECORDS MAINTAINED ON P.O. 27112 CONSISTING OF REQUISITION CHANGE NOTICES, CHANGE NOTICES, SUPPLIER ACKNOWLEDGMENT OF CHANGE NOTICE, PROCUREMENT ADVISORY REPORTS RELEASES, FIELD DEFICIENCY REPORTS, SURVEILLANCE REPORTS, QUALITY RELEASES, SUPPLIER PERFORMANCE EVALUATIONS, AND SUPPLIER Audits by W.	7/27/81	VARIOUS
20	7	W LTR to TVA (ANCHOR DARING UHI VALVE MODIFICATIONS)	4/24/81	NA
21	8	Qualified Supplier List	6/4/82	NA
22	8	Quality PROGRAM Audit Report (Anchor Daring) #QE-75-122	3/12/75	NA
23	5	PO#546-CAV-236901-13PE (CHARGING SI PUMPS)	6/27/75	0
24	8	RECORDS MAINTAINED ON PO#236901. ^{similar to} SOME CONTENTS of item 19	12/30/75	0
25	5	PO#546-CAZ-241672-BN (RESIDUAL HEAT EXCHANGERS)	12/30/75	0
26	8	RECORDS MAINTAINED ON PO#241672. SIMILAR to CONTENTS of item 19	VARIOUS	VARIOUS
27	5	PO#546-CLC-407101-BN (CLASS I TRANSMITTERS-LEVEL A)	6/27/79	0

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