

ORGANIZATION: COOPER ENERGY SERVICES
EN-TRONIC CONTROLS
MT. VERNON, OHIO

REPORT NO.:	99900373/83-01	INSPECTION DATE(S)	2/14-18/83	INSPECTION ON-SITE HOURS:	26
CORRESPONDENCE ADDRESS: Cooper Energy Services En-tronic Controls ATTN: Mr. H. A. Dekker, Director North Sandusky Street Mt. Vernon, OH 43050					
ORGANIZATIONAL CONTACT: Mr. G. W. Mizer, Manager - Technical Services and QA TELEPHONE NUMBER: (614) 397-0121					
PRINCIPAL PRODUCT: Engine/generator control and high voltage panels, and grounding cubicles.					
NUCLEAR INDUSTRY ACTIVITY: Approximately 5 percent.					
ASSIGNED INSPECTOR:		<u>I. Barnes</u> for W. E. Foster, Reactive and Component Program Section (R&CPS)		<u>7-7-83</u> Date	
OTHER INSPECTOR(S):					
APPROVED BY:		<u>I. Barnes</u> I. Barnes, Chief, R&CPS		<u>7-7-83</u> Date	
INSPECTION BASES AND SCOPE:					
A. <u>BASES</u> : Appendix B to 10 CFR Part 50 and 10 CFR Part 21.					
B. <u>SCOPE</u> : This inspection was made as a result of the issuance of two 10 CFR Part 50.55(e) reports by Arizona Public Service Company. The reports pertained to: (a) diesel generator control panel wiring which had been (Cont. on next page)					
PLANT SITE APPLICABILITY:					
Docket Nos. 50-387/388; 50-382.					
DESIGNATED ORIGINAL certified By <u>Rheanne Clark</u>					

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SCOPE: (Cont.) improperly crimped into terminal lugs, and (b) diesel generator high voltage cubicles and foundations with configurations different from that which was subjected to seismic qualification tests. The deficient hardware had been furnished to the Palo Verde Nuclear Generating Station, Unit Nos. 1 and 2, and Unit Nos. 1, 2, and 3, respectively. Additionally, NRC Headquarters concern that Cooper Energy Services may be utilizing commercial components (Agastat GPDC-740 relays) in safety class equipment when the commercial components had not been subjected to a nuclear quality assurance program was explored.

A. VIOLATIONS:

1. Contrary to Section 21.6 of Title 10, Part 21 of the Code of Federal Regulations, dated December 30, 1982, current copies of 10 CFR Part 21, Section 206 of the Energy Reorganization Act of 1974, or a notice had not been posted.

This is a Severity Level V violation (Supplement VII).

2. Contrary to Section 21.21(a) of Title 10, Part 21 of the Code of Federal Regulations, dated December 30, 1982, procedures had not been adopted to provide for: (1) evaluating deviations or informing the licensee or purchaser, and (2) assuring that a director or responsible officer is informed if the supplied basic component: (a) fails to comply, or (b) contains a defect.

This is a Severity Level V violation (Supplement VII).

B. NONCONFORMANCES:

1. Contrary to Criterion V of Appendix B to 10 CFR Part 50, paragraphs 5.1.4, 5.1.5, and 5.4.1 of Quality Assurance Procedure No. EQ9-11, Revision 0, dated November 1, 1977, regarding the Control Products Division of the Amerace Corporation (CPD-AC) a regular supplier of relays since 1975, at least:
 - a. Quality Assurance had not reviewed the QA Manual of CPD-AC as evidenced by the absence of a completed QA Manual Evaluation Check List.
 - b. A Vendor History Record/Performance Summary had not been completed every 2 years for CPD-AC.

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2. Contrary to Criterion V of Appendix B to 10 CFR Part 50 and Engineering Procedure No. EE-164, Revision 0, dated September 12, 1977, regarding completed Change Order Nos. 120, 127, and 157, dated August 11, 1982, for Sales Order Nos. 0407, 0420, and 0391, respectively:

- a. The change orders had not been listed in consecutive order on top of the last section of the En-Tronic project packet.
- b. Quality Assurance had not logged completion of the change orders.

C. UNRESOLVED ITEMS:

The initial issue of Cooper-Bessemer Drawing No. 2-04E-178, dated April 8, 1975, indicated that relays, Part Nos. 2-04E-178-001 and -002 (Vendor Part Nos. GPDC-740 and GPDNC-740, respectively) required exposure to radiation. The NRC inspector was informed that this requirement had been deleted regarding the Susquehanna Nuclear Generating Station, Units 1 and 2; however, the contract, its revisions, and attendant specifications were not available for review. Consequently, the NRC inspector could not verify the validity of the statement.

D. OTHER FINDINGS OR COMMENTS:

Followup on Requests -

- a. In response to an NRC Headquarters request, an effort was made to determine whether or not commercial components (relays) were being used in safety class equipment without the components being subjected "to a nuclear quality assurance program." The relay in question is Agastat GPDC-740. Cooper Energy Services (CES) Purchase Order No. 3609K2036, dated September 10, 1975, ordered relays, Part Nos. 2-04E-178-001 and -002 (Vendor Part Nos. GPDC-740 and GPDNC-740, respectively), with no requirements indicated. However, Cooper-Bessemer Drawing No. 2-04E-178 identifies environmental conditions, that is, temperature, humidity, and radiation. There was no indication that the relays satisfied the radiation requirement. The specifications for Waterford Nuclear Generating Station, Unit 3 and Susquehanna Nuclear Generating Station, Units 1 and 2 invoked IEEE 323. Contractor personnel believed this requirement had been deleted from the contract for Susquehanna; however, the contract, its revisions, or attendant specifications were not available for review by the NRC inspector.

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Currently, a program is underway for Wyle Laboratories to conduct qualification tests on a multitude of parts, materials, and components used in the emergency standby diesel generator sets and related auxiliaries. Among the items is a relay, Part No. 2-04E-178-011 (Vendor Part No. GPDR). Results of the qualification tests will determine the status of all Agastat relays used by En-Tronics Part Nos. 2-04E-178-001 through 2-04E-178-011.

- b. Arizona Public Service Company (APSCO) filed a final 10 CFR Part 50.55(e) report dated August 6, 1982, that pertained to problems with crimped connections of 4/0 AWG wiring in diesel generator control cabinets at Palo Verde Nuclear Generating Station, Units 1 and 2. The deficiencies were corrected at the site with En-Tronic personnel observing the operation. To preclude recurrence, En-Tronic Procedure No. EP03-02 was issued on February 1, 1983. Additionally, En-Tronic Controls is working with AMP Products in an effort to establish tool and process control. The corrective action and preventive measures, accomplished and planned, appear adequate.

Diesel generator control cabinets that had not been delivered were inspected and found to contain the same deficiency; these were corrected at En-Tronic Controls.

- c. APSCO filed a final 10 CFR Part 50.55(e) report dated November 22, 1982, that pertained to nonseismically qualified high voltage cubicles at Palo Verde Nuclear Generating Station, Units 1 and 2. The deficiency is exhibited by the mounting provisions being different between the delivered and tested hardware. The unit subjected to the seismic qualification test was anchored by bolts on four sides while the delivered cubicles provided anchorage on three sides only.

While the deficiency was reported to the NRC on October 21, 1982, it was determined that it was known as early as February 1980. Revision BR4, dated January 19, 1982, to Bechtel Drawing No. M018-209 (RTE Delta D55519-1), added the alternate method of welding the cubicle in place rather than bolting - due to another alleged problem.

The NRC inspector could not determine when or where the cubicles were received by CES from the manufacturer (RTE Delta), or whether they had been subjected to receiving inspection. The NRC inspector was informed that the current Quality Assurance Program would not

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permit the omission of bolt holes because a Quality Requirements Sheet (Purchase Specification) is initiated on product in this category.

Correction of the problem by welding rather than bolting could not be assessed because there were no documents that addressed the effects of this method of mounting on seismic qualification. CES has taken the position that they are not responsible for seismic qualification of cubicles that have been mounted by welding.

Revision BR7, dated October 8, 1982, to Bechtel Drawing No. M018-209 (RTE Delta D55519-1) added bolt holes to the fourth side. The unit that had not been shipped was corrected on Change Order No. 164 dated November 15, 1982, Sales Order No. 0391.

- d. In an effort to assess the effectiveness of the corrective actions and preventive measures, the following areas were evaluated: (a) change control; (b) manufacturing process control; (c) control of nonconformances and corrective action; (d) control of purchased material, equipment, and services; and (e) control of measuring and test equipment. The following documents were evaluated for requirements and/or implementation of requirements: 4 drawings, 3 specifications, 6 procedures, 12 sections of the quality assurance manual, 7 purchase orders, 2 internal memoranda, 6 letters, and numerous documents identified as: bills of material, test reports, statements of conformance, receiving inspection data forms, shop change orders, service representative reports, and nonconforming material reports. This activity resulted in the identification of 2 nonconformances detailed in paragraphs B.1 and B.2.
- e. Additionally, implementation of 10 CFR Part 21 was evaluated and resulted in the identification of two violations detailed in paragraphs A.1 and A.2. The NRC inspector reviewed a copy of a CES procedure for evaluating and reporting deficiencies. However, the procedure was for the Reciprocating Products segment of CES and there were no apparent documented statements that it also applied to En-Tronic Controls. En-Tronic Controls and Reciprocating Products have a vendor-vendee relationship.

Inspector W. E. Foster
 Scope/Module Followup on Regional Requests

DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
1	1	No. 2-04E-178 - Relay, Electrical	4-8-75	
2	1	No. ZGS-280-283	11-15-77	3
3	1	RTE Delta No. D55519-1 - H V Cubicles	3-24-81	
4	1	Beshel No. M018-209 -	10-8-82	BR7
5	2	Ebasco Svc 216-71 - Emergency Diesel Eng... Control Panel...	10-29-76	BR8
6	2	Beshel 13-MM-018 (Sed 4) - Tech Rpts... DG and Auxiliaries...	3-30-79	5
7	2	No. QR 2-04E-178 - QA Rpts For Vendor Items	11-21-78	4
8	3	Wyle Lab Test Procd No. 5413576-2A - Seismic TP... Assembly Panel...	8-7-76	B
9	1	QIV-10-8 - Qlty Progn Rpts For Vendor	8-13-79	3
10	1	EE 154 - QA Material Category Designations	12-29-75	
11	1	EQ 9-10 - Qlty Progn Rpts For Vendor	11-1-77	0
12	1	EQ 9-11 -	11-1-77	0
13	3	EE/64 -	9-12-77	0
14	4	12 sections -	9-15-78	3
15	5	No. 3609J5098	9-10-75	
16	5	No. 3609J5098	10-11-78	

Document Types:

1. Drawing
2. Specification
3. Procedure
4. QA Manual

Columns:

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

Document Types:

5. Purchase Order
6. Internal Memo
7. Letter
8. Other (Specify if necessary)

Inspector W. E. Foster
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DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
17	5	No. 360935256	11-10-78	
18		No. 342054456	7-30-80	
19		No. 360942689	12-7-82	
20		No. 360942569	10-20-82	
21	5	No. 360942569	11-11-82	1
22	6	R. M. Klor to Bob M. Bunde - Bechtel/APS S.O. 0391	8-17-82	
23	6	T. W. Keenan to C. L. Brown	7-28-80	
24	7	Ebassa, Svc - Waterford Sta Unit 3	3-19-78	
25		SES - Louisiana P & L - Waterford SES - Unit 3	6-1-76	
26		SES to Bechtel Pwr Corp - Berwick, PA - Xmits Certificate of Compliance	1-21-82	
27		SES to Ebassa Svc - Your Hr of 3-17-82	3-31-82	
28		Wyle Lab - Scientific Servs Syst Corp to CES - Mtg Conf of HV Substation Service	8-24-82	
29	7	~ - Eastern Opns - Musl Env Qual Prog for DG Sets	7-1-80	
30	8	BM 265-280-288 #100	5-22-76	
31	8	~ - ~ - #101		
32	8	Wyle Lab Seismic Simulation Test Rpt No. 43325-1	8-26-76	

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

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 1. Drawing
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 7. Letter
 8. Other (Specify-if necessary)

1	2	3	4
	TITLE/SUBJECT		
33	Wyle Lab Seismic Test Rpt No. 43335-2	9-3-76	
34	B7G5-262-949	5-13-77	3
35	Statement of Conformance to Ebarso	6-3-82	
36	Review Insp. Data Form	3/31-4/1/76	
37	Telephone Mtg Rpt - Ebarso & CEI	12-20-76	
38	AMP Productivity Corp. Certification of Conformance	1-25-83	
39	Shop Chg Order / S.O. - 120/0407; 127/0420; 157/0381-All ^{3/10/82} ; 5/0188, 4/27/76, 164/0381, 11/15/82		
40	Shop Chg Ord Log; Proj PKT for 0407, 0420, 0381, QA Shop Chg Ord Log		
41	Service Repair Rpt 11/1-23/82; 7/12-30/82		
42	Bechtel NCRs - EG 2165 7/1/82; EG 2292 8/23/82		
43	Electric Mags - CEI to Bechtel 2/27-30-70; 10407-13-MM-018-Eng/Gen Cntl Pnl & HV Cabinet; Bechtel to CEI 2/20/80 - ANPR Job 10407... Mounting of Cntl Cabinet; CEI to Bechtel 3/13/80 - 17.0.10407-13-MM-018-Cntl Mounting		
44	EP 03-02-Terminal Log Striping		

- Document Types:
1. Drawing
 2. Specification
 3. Procedure
 4. QA Manual

5. Purchase Order
6. Internal Memo
7. Letter
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