

ORGANIZATION: CONSOLIDATED CONTROLS CORPORATION
A SUBSIDIARY OF CONDEC CORPORATION
BETHEL, CONNECTICUT

REPORT NO.:	99900221/82-01	INSPECTION DATE(S)	7/13-15/82	INSPECTION ON-SITE HOURS:	24
CORRESPONDENCE ADDRESS: Consolidated Controls Corporation A Subsidiary of Condec Corporation ATTN: Mr. John Engelberger Vice President/General Manager 15 Durant Avenue Bethel, CT 06801					
ORGANIZATIONAL CONTACT: Mr. L. E. Goodsell, Jr., Manager-Quality Control TELEPHONE NUMBER: (203) 743-6721					
PRINCIPAL PRODUCT: Electronic instrumentation and control systems. NUCLEAR INDUSTRY ACTIVITY: Not identified during this inspection.					
ASSIGNED INSPECTOR: <i>for</i> <u><i>A. E. Foster</i></u> <u>8-23-82</u> A. E. Foster, Reactive & Component Program Section Date (R&CPS)					
OTHER INSPECTOR(S):					
APPROVED BY: <i>for</i> <u><i>I. Barnes</i></u> <u>8-23-82</u> I. Barnes, Chief, R&CPS 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 three 10 CFR Part 50.55(e) reports by the Tennessee Valley Authority. The reports pertained to deficient field buffer cards in the Solid State Control Systems that had been furnished to the Bellefonte Nuclear Plant, (cont. on next page)					
PLANT SITE APPLICABILITY: Docket Nos.: 50-438/439.					

DESIGNATED ORIGINAL
Certified By *Phianne Jantz*

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<p>SCOPE: (Cont.) Unit Nos. 1 and 2. The deficiencies were identified as: (1) improper soldering; (2) capacitor failure; and (3) installation of incorrect resistors. In order to evaluate the adequacy of corrective actions and preventive measures, related to the deficient field buffer cards, the following areas were inspected: (1) change control; (2) design control; (3) manufacturing process control; (4) control of nonconformances and corrective actions; and (5) implementation of 10 CFR Part 21.</p>		
A. <u>VIOLATIONS:</u>		
None		
B. <u>NONCONFORMANCES:</u>		
1. Contrary to Criterion V of Appendix B to 10 CFR Part 50, and Table No. 1 of the Inspection Checklist dated November 11, 1981, visual inspection in accordance with the applicable procedure had not been performed on reworked Field Buffer Modules, Part No. 6N193, Serial Nos. 010-1439, as evidenced by the TDS's, dated November 10, 1980 to June 28, 1982. The same is true of reworked Control Buffer Modules, Part No. 6N191, Serial Nos. 010-1869, reflected on TDS's dated November 11, 1981 to July 12, 1982.		
2. Contrary to Criterion V of Appendix B to 10 CFR Part 50, and paragraph 6.3.1.2, of Quality Control Manual No. 2, Revision 6, dated August 1, 1981, Field Buffer Module, Part No. 6N193, Serial No. 033, had not been scrapped as dispositioned by Discrepancy Report No. 1-0962, dated November 13, 1981, as evidenced by the TDS which reflects an acceptable operating retest on June 11, 1982.		
3. Contrary to Criterion V of Appendix B to 10 CFR Part 50, and paragraph 18.0 of Appendix A to the Tennessee Valley Authority Specification No. 2200:		
a. The date of test had not consistently been inserted in the TDS's for the Field Buffer Module, Part No. 6N193, and the Control Buffer Module, Part No. 6N191. A number of entries exhibited various days in November and December, but not the year.		
b. Actions taken in connection with noted deficiencies had not been entered in the TDS's for Part Nos. 6N191 and 6N193. For example, Discrepancy Report Nos. 2-0103, 2-0345, 2-0836, and 2-0410, had been initiated on various serial numbers of the noted part numbers; however, this information had not been entered in the TDS's for the affected part.		

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4. Contrary to Criterion V of Appendix B to 10 CFR Part 50, and paragraph II of Quality Control Instruction No. 057, dated April 21, 1978, revised quality control standards and quality control instructions had not been reviewed and approved by the Quality Control Manager or the Assistant Quality Control Manager.

5. Contrary to Criterion V of Appendix B to 10 CFR Part 50, and paragraph 6.1 of Quality Control Manual No. 2, Revision 6, dated August 1, 1981, final test (operating retest) of the following reworked Field Buffer Modules, Part No. 6N193, had not been completed prior to submittal to the customer inspector: Serial Nos.: 062, 081, 139, 172, 223, 310, 317, 586, 625, and 661. This is evidenced by: (1) the lack of such indication (stamp, initials, etc.) at the appropriate location in the TDS's; (2) a completed TVA QC Checklist and Shipping Release No. 62, dated February 19, 1982; and (3) CCC's Invoice No. 2356, dated March 23, 1982, which indicated that the aforementioned hardware was shipped on March 22, 1982.

6. Contrary to Criterion V of Appendix B to 10 CFR Part 50 and Table 1 of the Inspection Checklist, dated November 11, 1981, a burn-in test had not been conducted on the Controller Buffers, Part No. 6N191, after the replacement of transistors.

C. UNRESOLVED ITEMS:

None

D. OTHER FINDINGS OR COMMENTS:

The Tennessee Valley Authority filed three 10 CFR Part 50.55(e) reports with the Region II office of the Nuclear Regulatory Commission. The reports pertained to deficient field buffer cards of the Solid State Control Systems that had been furnished to the Bellefonte Nuclear Plant, Unit Nos. 1 and 2. The deficiencies were identified as: (1) improper soldering; (2) capacitor failure; and (3) installation of an incorrect resistor.

Improper soldering and installation of an incorrect resistor appear to be the result of inadequate process control while the failure of capacitors resulted from in-rush current. Original design records were unavailable for review; consequently, the inspector was unable to determine the extent of design control during the initial design.

Paragraph B indicates that corrective actions and preventive measures are not totally adequate.

1	2	TITLE/SUBJECT	3	4
1	7	CCC to TVA - Module Failures Experienced During Start-Up ...	11/20/80	
2	6	To: L. E. Goodsell, Fr: F. Butler - Visual Inspection of Modules	12/10/80	
3	6	To: QC File ... Fr: F. Butler - Visual Insp. of TVA Modules at Bellefonte ...	1/21/81	
4	6	To: W. D. Fox, Fr: F. Butler - Connective Action for TVA	4/29/82	
5	8	QC Inspection #052 - Issuance & Control of QC Standards and Instructions	4/21/78	
6		QC Standard #201 - Wave Soldering, Printed Circuit Assembly	3/25/82	
7		" " #202 - Term. Bnd Assy ... Prior to Soldering and Wiring	7/13/78	B
8		" " #204 - Soldering, Materials and Application Method	7/13/78	
9		" " #205 - Visual Inspection of Soldered Connections	7/8/81	
10		" " #203 - Socket and Pin Crimping	7/13/78	
11		Discrepancy Rpt Nos: 2-0345, 2-0103, 2-0836, 2-0819, 2-0910, 2-0126, 1-1109, 1-0962	Various	
12		6N191 & 6N193 Insp. Chk List TVA Module Remarks	11/11/81	
13		Factory Routing for P/W 6N191-R	11/23/81	A
14		~ ~ ~ ~ 6N193-R	11/18/81	B
15	8	TVA Nonconforming Condition Report No. 1309	12/11/80	

Document Types:

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

Columns:

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

1	2	TITLE/SUBJECT	3	4
32	7	TVA to CCC - Bellefonte... Solid-State Control System	2/3/81	
33	7	~ ~ ~ ~ ~	1/16/81	
34	8	Test Documentation Sheets - Sequence Control Module, 6N194	7/9/82	
35	3	KBS-1315-Qlty Conference TP & Test Documentation... 6N194	4/26/79	D
36	8	Test Documentation Sheets - Field Buffer, 6N193	11/10/81 - 6/28/82	
37	8	~ ~ ~ ~ ~ Control Buffer, 6N191	11/11/81 - 7/19/82	
38	8	~ ~ ~ ~ ~ Sequence Timer Module, 6N195		
39	3	KBS 1315-Qlty Conference TP & Test Documentation, 6N195	2/15/79	C
40	5	TVA #75K3-8550 (Chy Ord No. 16 3/27/79)	12/13/74	
41	8	Certificate of Compliance to TVA for 1/2 6N193-1 Rev C (108 ea)	2/26/82	
42	8	Engng Draw Chy No. 83950	10/28/81	
43	8	~ ~ ~ ~ ~ 83951	10/29/81	
44	8	~ ~ ~ ~ ~ 83215	4/30/81	
45	3	No. 1563-031 - Reporting of Defects and Noncompliance	9/14/81	A

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