

ORGANIZATION: NUTHERM INTERNATIONAL, INCORPORATED
MOUNT VERNON, ILLINOIS

REPORT NO.: 99900779/82-01	INSPECTION DATE(S): 6/21-25/82	INSPECTION ON-SITE HOURS: 28
CORRESPONDENCE ADDRESS: Nutherm International, Incorporated ATTN: Mr. R. Hanner President 501 South 11th Street Mount Vernon, IL 62864		
ORGANIZATION CONTACT: Mr. J. S. Hanner, Manager-Quality Assurance TELEPHONE: (618) 244-6000		
PRINCIPAL PRODUCT: Environmental Control and Systems		
NUCLEAR INDUSTRY ACTIVITY: Approximately 75 percent		
ASSIGNED INSPECTOR:	<u>T. Conway</u> W. E. Foster, Reactive & Components Program Section (R&CPS)	<u>7/30/82</u> Date
OTHER INSPECTOR(S):		
APPROVED BY:	<u>T. Conway</u> T. Barnes, Chief, R&CPS	<u>7/30/82</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 a 10 CFR Part 50.55(e) report by the Tennessee Valley Authority on May 14, 1982. The report pertained to deficiencies in the test program and referenced hardware furnished to the Watts Bar, Bellefonte, and Yellow Creek Nuclear Power Plants.		
PLANT SITE APPLICABILITY: Dockets 50-259/260; 50-424/427; 50-410; 50-461/462; and 50-412.		

DESIGNATED ORIGINAL

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REPORT
NO.: 99900779/82-01

INSPECTION
RESULTS:

PAGE 2 of 5

A. VIOLATIONS:

Contrary to Section 21.6 of Title 10, Part 21 of the Code of Federal Regulations, dated December 18, 1981, posting of 10 CFR Part 21, Section 206 of the Energy Reorganization Act of 1974, adopted procedures, or an appropriate notice had not been accomplished.

B. NONCONFORMANCES:

1. Contrary to Criterion V of Appendix B to 10 CFR Part 50, and paragraph 6.1.1 of the Quality Assurance Manual, No. QA-N-10179-3, Revision 3, dated October 2, 1981, (hereafter referred to as QAM):
 - a. The assembly of heater elements had not been covered by written manufacturing instructions and engineering procedures or drawings. Consequently, assembly personnel had no written information regarding mounting hardware and tightening requirements.
 - b. The bending of Part No. 064 was not being performed as required by Drawing No. 7003-51054-23, dated March 31, 1982. Rather, the designated portion (3 inches by 38.375 inches) was sheared and reattached, at 90 degrees, by welding.
 - c. Wiring was not being performed as indicated on Drawing No. 1023-51151-43, Revision 1, dated April 8, 1982. The wire being used was manufactured by Rockbestos while the drawing specified wire manufactured by National.
2. Contrary to Criterion V of Appendix B to 10 CFR Part 50, and paragraph 7.1.1 of the QAM, numerical control programs and tapes which describe activities affecting quality had not been reviewed for adequacy and approved for release, prior to usage.
3. Contrary to Criterion V of Appendix B to 10 CFR Part 50, and paragraph 10.1.3.1(2) of the QAM:
 - a. Welding of Part No. 064 (Drawing No. 7003-51054-23, dated March 31, 1982) was not being performed in accordance with a qualified procedure inasmuch as the procedure being used required E 70S-6 filler metal while that being used was E70S-3.
 - b. The electrode wire speed was computed to be approximately 284 inches per minute rather than the specified 170-205 inches per minute, during performance of the welding on Part No. 064.

REPORT NO.: 99900779/82-01	INSPECTION RESULTS:	PAGE 3 OF 5
<p>4. Contrary to Criterion V of Appendix B to 10 CFR Part 50, and paragraph 16.1.4 of the QAM, the disposition of all nonconforming parts had not been noted in the Inspection Report-Quality Assurance, for a remote control panel for Project No. A-1089. Three nonconforming conditions had been recorded at Operation No. 3, only one had been dispositioned, but the operation had been accepted.</p> <p>5. Contrary to Criterion V of Appendix B to 10 CFR Part 50, paragraph 4.1.2 and its subparagraph (c) of the QAM, design drawings had not been prepared in accordance with contractual requirements as evidenced by Drawing Nos. 1023-51153-33, and 1023-51151-43, both are Revision 1, dated April 8, 1982. The drawings specified wire manufactured by Marathon and National, respectively; while the customer specification required wire manufactured by Cerro Wire and Cable Company.</p> <p>6. Contrary to Criterion V of Appendix B to 10 CFR Part 50, and paragraph 11.1.2 of the QAM, purchaser witness and hold points (welding and shop tests) required by Purchase Order No. 91-1325-226, dated November 9, 1981, had not been indicated in the Inspection Reports-Quality Assurance for the remote control panel and electric air handling heater for Project No. A-1089; nor had documented exceptions been taken as required by Note 2 of the purchase order.</p> <p>7. Contrary to Criterion V of Appendix B to 10 CFR Part 50, and paragraph 13.1.1 of the QAM, wire terminal crimping tools (hand and bench mounted) had not been controlled by written procedures to assure calibration.</p>		
<p>C. <u>UNRESOLVED ITEMS:</u></p> <p>None</p>		
<p>D. <u>OTHER FINDINGS OR COMMENTS:</u></p> <p>1. Initial Management Meeting and Exit Interview - Management representatives were provided with an overview of the organization of the Commission. They were informed of the authority and responsibility contained in Section 206 of the Energy Reorganization Act of 1974. Also, information regarding 10 CFR Part 21 was provided. The scope of the inspection and reporting were explained. At the exit, content of responses and handling of proprietary information was addressed, as well as the findings of this inspection. Throughout the inspection, personnel expressed a genuine desire to satisfy all requirements of the nuclear program. During the course of this inspection, this determination was exhibited by initiating positive corrective actions.</p>		

REPORT
NO.: 99900779/82-01

INSPECTION
RESULTS:

PAGE 4 OF 5

Management personnel provided a history of the company, products supplied and nuclear involvement. They expressed the intent of staying in the nuclear business and maintaining a quality program that satisfied the requirements.

2. Followup on a Regional Request - The Tennessee Valley Authority filed a 10 CFR Part 50.55(e) report with the Nuclear Regulatory Commission, Region II, on May 14, 1982. The report pertained to inadequate documenting and reviewing of test results. The report identified Bellefonte, Watts Bar, and Yellow Creek Nuclear Power Plants as the affected sites.

The inspector reviewed test results forms of completed tests and verified that test data is being documented; test data is also being evaluated by Quality Assurance and Engineering personnel. Details of this activity are covered in Quality Assurance Procedure No. 615, Revision 2, dated May 6, 1982.

In order to comply with the regional request, manufacturing process control, change control, audits, and quality assurance records were selected for inspection. However, manufacturing process control was the only facet inspected. Adequate corrective actions and preventive measures had been taken in the test control element; however, nonconformances were observed in the other elements of manufacturing process control. Within this area of the inspection, the following documents were evaluated: (1) 18 QA procedures; (2) 10 drawings; (3) 9 sections of the QA Manual; (4) 5 each, letters and purchase orders; (5) 2 each, QA inspection reports, programming sheets, and wire speed correlation charts; and (6) 1 test result form. Also, manufacturing activity was observed in the following areas: (1) machining; (2) welding; and (3) electrical assembly. See items B.1 through B.7 for identified nonconformances.

3. Implementation of 10 CFR Part 21 - It was determined that no effort had been undertaken. During this area of the inspection, three purchase orders were reviewed and one bulletin board observed. See item A for the identified violation.
4. Actions taken by the contractor during this inspection:
 - a. Annotated the following drawings to reflect actual conditions: (1) 7003-51053-33, Revision 1, dated April 23, 1982; (2) 7003-51054-23, dated March 31, 1982; and (3) 1023-51153-33, Revision 1, dated April 8, 1982.

ORGANIZATION: NUTHERM INTERNATIONAL, INCORPORATED
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REPORT NO. : 99900779/82-01	INSPECTION RESULTS:	PAGE 5 OF 5
<p>b. Initiated the following Quality Assurance Procedures Nos.:</p> <ul style="list-style-type: none">(1) 521 - Automatic Wire Feeder Dial vs. Wire Speed Calibration;(2) 618 - Element Installation; and (3) 619 - Element Installation. <p>c. Invoked 10 CFR Part 21 on the following Purchase Orders: Nos.:</p> <ul style="list-style-type: none">(1) 1089-21; (2) 1114-42; and (3) 1123-22. <p>d. Documented the intent to revise and issue the following drawings "as soon as print machine is repaired": (1) 1023-51151-43; (2) 1023-51153-33; and (3) 7003-51054-23.</p> <p>e. Documented a tentative revision to a procedure regarding control of programming documents and tapes.</p>		

1	2	TITLE/SUBJECT	3	4
1	8	Test Results Form - Final Test Data for Proj. No. T-1097		
2	3	No. 615 - Test Results Procedures	3-20-82	0
3		No. 611 - Test Results Form	5-6-82	2
4		No. 725 - QA, Q.C. & Mfg. Package Formulation & Distribution Procedures	3/24/82	1
5		No. 923 - Welding Operator Qualification Tests	5/25/82	1
6		No. 930 - Procedure Qualification Record	3/22/82	0
7		No. 937 - Welding Procedure Specification	3/22/82	0
8		No. 521 - Auto. Wire Feeder Dial vs. Wire Spd. Calib. Press	6/9/82	0
9		No. 618 - Element Installation Procedure	6/25/82	0
10	3	No. 619 - Element Installation Procedure	6/25/82	0
11	5	Number No. 1039-21	6/25/82	0
12	1	~ 1114-42	6/25/82	
13	5	~ 1133-23	6/25/82	
14	6	Project No. A-1089 - Drawg. No. 1023-51151-43; 1023-51153-33	6/25/82	
15	6	Proj. No. T-1114 - Drawg. No. 7003-51054-23	6/24/82	
16	7	TVA - Re: Brown Ferry Cabinet, Sntl. Relay; Sequoyah & Watts Dam	11/4/81, 1/3/82 4/29/82, 5/1/82	

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

5. Purchase 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)

Scope/Module Follow up on Regional Requests DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
17	7	Nuthorn - TVA Vendor Audit; Audit Findings	11/24/81, 3/23/82 3/20/82, 9/6/82	
18	5	TVA - No. 81P6 - 829413 - Cntl Pnl for Reactor Protection System	7/2/81	
19	5	AAF - No. 91-1322-220 - Dust Htrs and Cntl Pnl's	11/2/81	
20	5	MSA - No. T-125331 - Heaters and Controls	6/30/81	
21	5	AAF - No. 91-1329-216 - Finned Tube Dust Heaters	8/13/81	
22	4	No. QA-N-10179-2	10/2/81	3
23	3	No. 401 - Disciplinary Inspections	1/4/80	8
24	1	No. 418 - Pneumatic Humidity Sensor Testing	9/1/81	8
25	1	No. 509 - Tagging ... Paint Thickness	6/11/81	8
26	1	No. 801 - Liquid Penetrant Inspection	1/13/79	8
27	1	No. 802 - Painting	12/12/80	1
28	1	No. 903 - Welding Filler Material Control	12/7/81	1
29	3	No. 904 - Welding Visual Inspection	5/3/82	2
30	1	No. 1023-51281-13 - Door	6/4/82	
31	1	No. 7003-51050-52 ... Power Distribution Cabinet	6/8/82	4
32	1	No. 1023-51390-13 - Bracket for L/R Cover	6/4/82	

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) |

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Inspector W. E. Foster
 Scope/Module Follow up on Regional Requests DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
33	8	Programming Sht for Dev. No. 1023-51390-13		
34	1	No. 7003-51052-33 - Breaker Mounting & Air Bar Detail	6/17/82	2
35	1	No. 7003-51054-23 - Lt. & RT. Branch Breaker Standoff...	3/31/82	
36	8	Wires Speed Correlation Chart	9/13/80	
37	1	No. 7003-51053-33 - Lt. & RT. Circuit Breaker Cover...	4/23/82	1
38	8	Programming Sht for Dev. No. 7003-51054-23		
39	3	Inspection Report - QA for Tag No. 2 HUSCH 217A - Remote Gnt/Pal	4/19/82	
40	1	No. 1023-51150-33 - ... Electric Air Handling Heater	4/6/82	1
41	1	" " - 51151-43 - Electrical Schematics - Electric Air Handling Heater	4/8/82	1
42	1	No. 1023-51481-43 - Fabrication Layout	5/12/82	1
43	1	No. 1023-51153-33 - Elec. Schematics - Elect. Air Handling Heater	4/8/82	1
44	7	Matheson to AAF - Beaver Valley Power Sta... P & 91-1325-326	1-16-81 11-16-82	
45	7	Western Union Mailgram - AAF to Matheson	3/2/82	
46	7	Matheson to AAF - Beaver Vly Power Sta...	1/4/82	
47	3	No. 107 - Wiring Inspection...	5/12/81	2
48	3	No. 121 - ...	12/13/81	2

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Inspector W. E. Foster

Scope/Module Follow up on Regional Requests DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
49	5	AAF No. 91-1325-226 - Duct Heaters & Controls Panel	11/9/81	
50	2	Stone & Webster No. 2 BS-157 / Add. No. 1	12-18-80/ 5/20/81	1/1
51	2	~ No. NMPB-17243U, Add. No. 1	2/8/78	
52	2	TVA No. SF-5.4.2.01	12/21/79	1
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Scope / Module - Implementation of 10 CFR Part 21				
1	5	TVA No. 81PB-829413	7/2/81	
2	5	AAF No. 91-1332-220	11/2/81	
3	5	AAF No. 91-1329-216	8/12/81	

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

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