

ORGANIZATION: MAGNETROL INTERNATIONAL, INC.
DOWNERS GROVE, ILLINOIS

REPORT NO.: 99900780/82-01	INSPECTION DATE(S): July 12-16, 1982	INSPECTION ON-SITE HOURS: 27
CORRESPONDENCE ADDRESS: Magnetrol International, Inc. ATTN: Ms. J. G. Stevenson President 5300 Belmont Road Downers Grove, Illinois 60515		
ORGANIZATION CONTACT: D. J. Stevenson/D. K. Frantzen TELEPHONE: (312) 969-4000		
PRINCIPAL PRODUCT: Level switches, level controllers NUCLEAR INDUSTRY ACTIVITY: 2% of manufacturing activity is nuclear		
ASSIGNED INSPECTOR:	<u><i>L. B. Parker</i></u> L. B. Parker, Reactive & Component Program Section (R&CPS)	<u><i>8/26/82</i></u> Date
OTHER INSPECTOR(S):		
APPROVED BY:	<u><i>I. Barnes</i></u> I. Barnes, Chief, R&CPS	<u><i>8/30/82</i></u> Date
INSPECTION BASES AND SCOPE:		
A. <u>BASES</u> : 10 CFR Part 21 and 10 CFR Part 50, Appendix B.		
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 Southern California Edison Company pertaining to the corrosion failure of level alarm switches that have been furnished to San Onofre, Units 2 and 3. Additionally, QA program review, material traceability (ASME) and implementation of 10 CFR Part 21 were inspected.		
PLANT SITE APPLICABILITY: 50-361, 50-362, 50-382, 50-333		

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PDR QA999 EMVMAGNT
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DESIGNATED ORIGINAL
Certified By *Phyllis Jouts*

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INSPECTION
RESULTS:

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A. VIOLATIONS:

Contrary to paragraph 21.21(a) of 10 CFR Part 21 procedures had not been adopted for evaluating defects pertaining to Class 1E items.

B. NONCONFORMANCE:

Contrary to Criterion V of Appendix B to 10 CFR Part 50, Purchase Order No. 81-4801 issued by Power Authority of the State of New York, and Paragraph 4 of IEEE Standard 323-1974, a disciplined (i.e., documented) quality assurance program had not been established for the manufacture of Class 1E items.

C. UNRESOLVED ITEMS:

None

D. OTHER FINDINGS OR COMMENTS:

1. Reactive Item:

A Southern California Edison Company 10 CFR Part 50.55(e) report addressed Magnetrol-supplied flood level alarm switches used in safety-related applications at San Onofre Nuclear Station, Units 2 and 3 (SONGS).

The switches were inoperative due to corrosion, which was caused by leaking submersible NEMA 6 switch enclosures. The switch enclosures leaked in the following three areas: (1) through "sealed" rivets, which attached the nameplate to the enclosure; (2) through the connection between the enclosure base and cover; and (3) a grommeted hole in the enclosure cover, where a screw is provided for tightening the enclosure.

The leakage problem at SONGS has been corrected by replacing the NEMA 6 switch enclosure with a modified explosive proof (EP) enclosure (qualified to NEMA 6). The EP enclosure is of cast iron construction with the leaking areas corrected as follows: (1) the nameplate is no longer riveted to the enclosure; (2) the connection between the enclosure base and cover are threaded and gasketed (O-ring); and (3) elimination of the grommeted hole by threading of the cover.

Magnetrol notified the following nine purchasers of the leakage problem and provisions have been made to replace the deficient switch enclosures: Baltimore Gas & Electric Company, Baltimore, Maryland; Bechtel Power Corporation, Gaithersburg, Maryland, and Los Angeles, California (SONGS); Commonwealth Associates, Inc., Jackson, Missouri; Consolidated Edison, New York, New York; Ebasco Services, Inc., Elma, Washington, and New York, New York (Waterford 3); Gilbert Associates, Inc., Reading, Pennsylvania; and Portland General Electric Company, Boardman, Oregon.

2. QA Program Review

- a. Quality Assurance Program - On review of the vendor's QA program, the NRC inspector ascertained that Class 1E items had not been addressed in either their ASME accepted QA program, or in a separately documented QA program prepared in accordance with IEEE requirements (see paragraph B).
- b. Material Traceability (ASME) - Three manufacturing routing packages were examined for completeness. They were found to have all inspection points complete, and heat code letters where required. Ten heat code letters were examined for traceability. The code letters were traceable to vendor's heat numbers and certified material test reports (CMTR). The vendors shown on the CMTR's were examined and found to be on the qualified vendor's list. The vendor's Quality System Certification was examined and found current in all cases examined.
- c. Implementation of 10 CFR Part 21 - The NRC inspector reviewed the vendor's Standard Procedure Instruction No. CSA-003, "Reporting Defects and Non-Compliance to the NRC," and found that the procedure fails to address Class 1E items (see paragraph A).

Observations of the employee's bulletin board verified that the above vendor procedure, Section 206 of the Energy Reorganization Act of 1974, and 10 CFR Part 21, were posted.

ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
1	COP	C136	BASK	START 5-21-82	PRODUCTION NO. C136 M.D. TIKALSKY APPLICATION ENGR. PASNY J. FITZPATRICK N.P.P. "UM STAMPED" 198DED 25HTS
2	DCO	3170-270	-	6-4-82	C136 WI 80A82 MODEL # RCS-751-EPI UPX-SIMD4DC-SIMD4DC
3	REQ	-	-	6-30-82	C136 6EA. " ASME SA 105 OR ASTM A 105 SOCKOLETS 1" 3000LB. FLAT SOCKOLETS, 6EA. 1" 3000LB 5" PIPE RUN
4	BOM	1-C136-10	-	-	ADAPTOR NUT WITH EXTENSION
5	BOM	1-C136-11	-	-	E-TUBE ASSEMBLY
6	BOM	1-C136-22	-	-	BCS-751 CHAMBER ASSEMBLY
7	BOM	1-C136-33	-	-	MODEL BCS-751 EP/VPX SIMD4DC-SIMD4DC
8	P.O.	81-4801	BASIC	11-4-81	FROM: PASNY, J.A. FITZPATRICK NPP 6 LEVEL SWITCH MAGNETROL TYPE - TO: MAGNETROL INT'L, INC. BCS-751-EP/VPX-SIMD4DC-SIMD4DC
9	ATTACHMENT TO ITEM 8	-	-	-	CLASS I E EQUIPMENT QUALIFICATION REQUIREMENTS FOR SYSTEM NO 13 COMP. NO. 13LS-076 A & B AND 13LS-077 A & B IE ³ 323/74 ; IE ³ 344/75
10	MR	X05-9207-121	E	6-30-82	NAMEPLATE FOR ASME CODE UNITS X05-9207
11	DWG	X-05-9207	E	8-77	NAMEPLATE FOR ASME CODE UNITS USED ON U/UM ; CLASS II/III
12	MR	1-C137-33 C137-101	A	2-27-82	402 CHAMBER ASSEMBLY DWG NO. C137-33 PRODUCTION NO C137-101 ITEM #1 QUANTITY 7
13	DWG	C137-33	A	02-82	TITLE - SEISMIC 402 CHAMBER ASSEMBLY 1" SOC. WELD CONNECTIONS
14	CERT	LIQUID PENETRANT WELD NO. 3	-	6-15-82	LIQUID PENETRANT CERTIFICATION OF EXAMINATION FOR PRODUCTION ORDER NO. C137-101 ITEM #1 PART NO. 1-C137-33 SPEC. CQA-012
15	PRO-SPEC		4	8-24-79	PRO SPEC FOR THE WELDING OF STAINLESS STEEL USING THE GTAW PROCESS WITHOUT FILLER METAL FOR THE ROOT PASS AND THE GTAW PROCESS WITH FILLER METAL FOR THE FILL PASSES. UNDER THE PROVISIONS OF SECTION III, DIVISION I AND SECTION IX OF THE ASME B & PVC.

TYPE OF DOC:

DWG - DRAWING
SPEC - SPECIFICATION
PRO - PROCEDURE
QAM - QA MANUAL
QCD - QC DOCUMENT
P.O. - PURCHASE ORDER
INM - INTERNAL MEMO

LTR - LETTER
COP - CODE ORDER PROCESSING SCHEDULE ; TRANSMITTAL SHEET
DCO - DESIGN CHANGE ORDER
REQ - SPECIAL MATERIAL REQUISITION FORM
BOM - BILL OF MATERIAL
MR - MANUFACTURING ROUTING SHEET
CERT - CERTIFICATE

INSPECTOR L. B. PARKER
 SCOPE MANUFACTURING
PROCESS CONTROL

DOCUMENTS EXAMINED

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ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
16	PRO-SPEC	WELD NO. 19	5	10-27-77	PRO-SPEC FOR THE WELDING OF CHROMIUM-MOLYBDENUM STEEL USING GTAW PROCESS WITH A CONSUMABLE INSERT FOR THE ROOT PASS AND THE SMAW PROCESS FOR THE FILL PASSES, UNDER THE PROVISIONS OF SECT. III, DIV I, AND SECT. IX OF ASME B 31.1 PVC.
17	DWG	C137-09	A	02-82	3000 LB. SOCKOLET
18	DWG	C137-10	A	02-82	WELD INSERT
19	DWG	C137-12	A	02-82	WELD ELECTRODE
20	SPI	CQA-012	B	10-19-81	LIQUID PENETRANT INSPECTION PROCEDURE
21	DCS	1-C137-33	-	3-24-81	—
22	MR BOM	005-5206-001	A	4-22-81	MTG BRACKET
23	DWG	X05-5206	A	3-79	MOUNTING BRACKET
24	P.O.	9940	-	3-4-82	^{50#} ASME 1/8" DIA. E-8018 B2L WELD ELECTRODE (ITEM 2 ON PO)
25	CMTR	9940 TICKET # N-3846	-	7-14-81	ATOM ARC 8018 CM (WELDSTAR NO. N-1224 EXPIRES 9-8-81) 1/8" DIA. TYPE E8018-B2 LOT NO. 3F118D03 HEAT NO. 25398
26	SPI	CMA-009	6	11-10-80	CLEANING AND HANDLING PROCEDURE
27	CMTR	9940 TICKET # N-3846	-	7-23-80	ATOM ARC 8018 CM (WELDSTAR QUALITY SYSTEMS NO. N-1224 EXPIRES 9-8-81) 5/32" DIA TYPE E8018-B2 LOT 3F003C04 HEAT NO. 412K9311
28	P.O.	9940	-	3-4-82	^{50#} ASME 5/32" DIA E-8018 B2L WELD ELECTRODE (ITEM 1 ON PO)
29	P.O.	11947	-	6-28-82	LINDBERG HEAT TREATING CO. TO HEAT TREAT 7 pcs. C137-101 AND 1 TEST PCS.
30	CERT	—	-	7-12-82	HEAT TREAT CERTIFICATION FROM LINDBERG HEAT TREATING CO. FOR MAGNETROL P.O. 11947

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 QCD - QC DOCUMENT
 P.O. - PURCHASE ORDER
 INM - INTERNAL MEMO

LTR - LETTER
 SPI - STANDARD PROCEDURE INSTRUCTION
 DCS - DOCUMENTATION CHECK SHEET
 CMTR - CERTIFIED MATERIAL TEST REPORT

INSPECTOR L.B. PARKER

SCOPE MANUFACTURING

PROCESS CONTROL

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ITEM No.	TYPE OF DOCUMENT	DOCUMENT No.	REV.	DATE	TITLE / SUBJECT
31	MR Package	1-C137-22	A	2-27-82	CENTER SECTION ASSEMBLY (CONTAINS DOCS SIMILAR TO ITEMS 12 THRU 30)
32	LOG	-	-	-	CODE LETTER AND HEAT NUMBER LOG
33	SPI	-	-	-	STANDARD PROCEDURE INSTRUCTION MANUAL CJA CPA CEA CMA CIA
34	SPI	CHA-001	4	7-10-81	PREPARATION AND USE OF MANUFACTURING ROUTINGS
35	LIST	-	-	6-24-82	QUALIFIED VENDOR LISTING FOR ASME SECTION III AND VIII MATERIAL SIGNED BY F.J. KADLEC 7 pages
36	COMMERCIAL QAM	-	-	-	Section 2.0 Organization and Responsibility

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INSPECTOR L.B. PARKERSCOPE REACTIVE ITEM

DOCUMENTS EXAMINED

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ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
1	LTR	LOG BX-6910	-	12/3/81	FROM: BECHTEL PWR. CORP., Norwalk, Calif. SUBJ: San Onofre Flooding Level Switch Enclosures. TO: MAGNETROL INTERNATIONAL, INC.
2	INM LTR	-	-	12/8/81	FROM: D.K. FRANTZEN SUBJ: Model FLS Design Deficiency TO: D.J. STEVENSON SONGS 2 & 3
3	INM	-	-	12/10/81	FROM: D.K. FRANTZEN SUBJ: CALLED MEETING TO DISCUSS BECHTEL (SONGS) TO: DISTRIBUTION SUBJ: LEVEL SWITCH ENCLOSURE PROBLEM
4	PRO	CSA-003	-	6/25/82	REPORTING DEFECTS AND NON-COMPLIANCE TO THE NRC
5	INM	-	-	12/11/81	FROM: D.K. FRANTZEN SUBJ: Deviation Evaluation Board TO: DISTRIBUTION
6	INM	-	-	12/15/81	FROM: D.K. FRANTZEN SUBJ: FLS Design Deficiency at SONGS TO: J.P. ZANKER
7	LTR	-	-	12/15/81	FROM: J.P. ZANKER SUBJ: 10CFR Part 21 Notification of product defect TO: REGION III at SONGS 2 & 3 and Waterford 3.
8	LTR	-	-	12/21/81	FROM: MAGNETROL (FRANTZEN) SUBJ: NOTIFICATION TO NRC OF FLS TO: BECHTEL (ROGERS) LA, CA. DESIGN DEFICIENCY
9	LTR	-	-	12/22/81	FROM: MAGNETROL (FRANTZEN) SUBJ: NOTIFICATION OF FLS DESIGN TO: EBASCO SERVICES INC. NY NY. DEFICIENCY.
10	LTR	-	-	2/1/82	FROM: MAGNETROL (FRANTZEN) SUBJ: A.L. KELLER LTR OF 1/25/82 TO: BECHTEL WHITTIER, CA. CORRECTIVE ACTION REQUEST #F-1391
11	LTR	PRBY82- PRB 3388	-	2/25/82	TO: MAGNETROL, PARAMOUNT CA. (SALZER) SUBJ: LEVEL SWITCHES - FLOAT FROM: BECHTEL, LA, CA (KELLER) SUBJ: TYPE CAR #F-1391
12	CAR	F-1391	-	1/18/82	SONGS 2 & 3 JOB# 10079 SPEC# S023-506-3 (P.O.#4141811) 2 Pgs. SUBJ: NEMA-6 ENCL (ADVERTISED) BUT WAS NOT SUBMERSIBLE.
13	INM	-	-	2/2/82	TO: R.M. HICKOX FROM: R.K. SEULING SUBJ: NEMA-6 S1 HOUSING TEST PROGRESS REPORT
14	INM	-	-	2/15/82	TO: DISTRIBUTION FROM: D.K. FRANTZEN SUBJ: MODEL FLS HOUSING DESIGN DEFICIENCY
15	INM	-	-	4/9/82	TO: J.P. ZANKER FROM: D.K. FRANTZEN SUBJ: MODEL FLS LEAKAGE PROBLEM

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 P.O. - PURCHASE ORDER
 INM - INTERNAL MEMO

LTR - LETTER
 CAR - CORRECTIVE ACTION REQUEST (BECHTEL)

