

ORGANIZATION: WYLE LABORATORIES  
NORCO, CALIFORNIA

REPORT NO.: 99900905/85-01	INSPECTION DATE(S): 5/13-17/85	INSPECTION ON-SITE HOURS: 99
CORRESPONDENCE ADDRESS: Wyle Laboratories Western Operations ATTN: Mr. R. C. Sadlier General Manager 1841 Hillside Drive Norco, California 91760 ORGANIZATIONAL CONTACT: Mr. Larry Houston, QA Manager TELEPHONE NUMBER: (714) 737-0871		
PRINCIPAL PRODUCT: Equipment testing and engineering services  NUCLEAR INDUSTRY ACTIVITY: The Wyle Laboratories, Western Operations facility provides engineering and test services to military, utility and commercial nuclear power organizations. Approximately fifteen percent of the facility's capability is currently committed to environmental qualification testing of safety-related equipment for the commercial nuclear power industry.		
ASSIGNED INSPECTOR: <u>Randolph N. Moist</u> B. N. Moist, Equipment Qualification Inspection Section (EQIS)		<u>6-19-85</u> Date
OTHER INSPECTOR(S): G. T. Hubbard, EQIS E. H. Richards, SNL V. J. Dandini, SNL		
APPROVED BY: <u>U. Potapovs</u> U. Potapovs, Chief, EQIS, VPB		<u>6-17-85</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 consisted of: (1) a technical evaluation of Equipment Qualification (EQ) test activities for safety-related equipment; (2) witnessing EQ testing; and (3) verification of implementation of the quality assurance (QA) program.		
PLANT SITE APPLICABILITY: Not identified		

8507180299 850709  
PDR GA999 EXIWYLE  
99900905 PDR

ORGANIZATION: WYLE LABORATORIES  
NORCO, CALIFORNIA

REPORT  
NO.: 99900905/85-01

INSPECTION  
RESULTS:

PAGE 2 of 5

A. VIOLATIONS:

None

B. NONCONFORMANCES:

1. Contrary to Criterion V of Appendix B to 10 CFR Part 50 and paragraph 6.1 of Standing Practice Procedure 518-3-B dated March 15, 1982, Test Plans 566-1674 Revision A dated May 1, 1984 and 566-1674-1 Revision A dated May 1, 1984, had no documented objective evidence of approval by the same organization that performed the original review and approval.
2. Contrary to Criterion V of Appendix B to 10 CFR Part 50 and Section 11, paragraph 11.10 of Wyle Laboratories Quality Assurance Manual Revision E dated March 1, 1985, Test Reports 58883-1 dated November 20, 1984 and 58883 dated August 24, 1984, documented instances where deviations to the prescribed requirements occurred during testing but Notices of Deviation were not written.
3. Contrary to Criterion V of Appendix B of 10 CFR Part 50 and Section 5 paragraph 5.0 of Wyle Laboratories Quality Assurance Manual Revision E dated March 1, 1985, there was no documented procedure for the control of mixing the chemical spray solution used during design basis event testing and monitoring the solution's PH.

C. UNRESOLVED ITEMS:

None

D. OTHER FINDINGS OR COMMENTS:

1. Technical Evaluation - The NRC Inspectors and Sandia Consultants performed an indepth technical evaluation and review of eight programs for qualification testing of safety-related electrical equipment. The following table summarizes the programs examined including equipment type and types of documents examined.

<u>Program</u>	<u>Equipment Type</u>	<u>Documents Examined</u>
26443	Thermocouples	Test Report (TR), Qualification Plan (QP), Data Sheets

REPORT NO.: 99900905/85-01	INSPECTION RESULTS:	PAGE 3 of 5
53273	Pneumatic Hydraulic Oper.	TR, Purchase Order (PO), Test Procedure (TP), Data Sheets
53309	Electro-Hydraulic Actuator	Job File (JF)
58681	Electrical Penetration	TR, JF, TP, PO
58801	Operator Assembly & Servo	TPs TR, Specification, Data Sheets, POs
58883	Cable, Conduit Seals	TP, PO, TF, TRs
58939	Limiterorque Fast Acting Actuator	QP, TR, Specification
58941	AC Motor Actuator	TR
<p>The NRC inspectors and Sandia Consultants reviewed the EQ process pre-scribed in each test plan and reviewed test results, including the bases for accelerated thermal aging and radiation and verified calculations.</p> <p>Each of the eight EQ test plans and related engineering documents were examined for the following:</p> <ul style="list-style-type: none"><li>a. Adequate test instrumentation and their accuracies described and used to meet NUREG-0588/IEEE-STD-323/1984.</li><li>b. Equipment interfaces addressed.</li><li>c. Test acceptance criteria established as described in the test specification or in the design engineering documents, such as calculations and engineering letters to meet NUREG-0588/IEEE-STD-323/1974.</li><li>d. Same equipment used for all phases of testing and represented a standard production item.</li><li>e. Environmental conditions established and described (e.g., pressure and temperature profiles, and thermal aging factors were consistent with those outlined in the test specification or test plan).</li></ul>		

REPORT  
NO.: 99900905/85-01

INSPECTION  
RESULTS:

PAGE 4 of 5

- f. Test results adequately reduced and evaluated against established acceptance criteria described in customer test specifications or purchase orders and demonstrated that these requirements had been met.
- g. All prerequisites for the given tests as outlined in the test specification met.
- h. Test equipment description included a description of all materials, parts, and subcomponents.
- i. Notices of Deviations properly documented.

During the above evaluation and review, the NRC inspectors and Sandia Consultants identified the Nonconformances described in paragraph B.1, B.2 and B.3 and as follows:

- a. The NRC inspector review of the summary section of TR 58883-1 dated March 20, 1984, showed that test specimen No. 1 started to leak at the beginning of Loss of Coolant Accident (LOCA) testing. The conduit seal was plugged off and left in the LOCA tank for the remainder of the test. No Notice of Deviation was written. (See Nonconformance B.2)
- b. The NRC inspector review of paragraph 5.1.4. of TR 58883 dated August 24, 1984, showed that after the specimens were mounted in the LOCA chamber and the chamber was sealed, a controlled steam/superheated steam blowdown of the LOCA chamber was performed for six hours and forty-five minutes. The test was interrupted at three hours and fifteen minutes due to the loss of superheated steam. During the down time (approximately nine hours) the LOCA chamber was maintained at 200F and ambient pressure. The superheater was recharged and testing continued. No Notice of Deviation was written. (See nonconformance B.2)
- c. The NRC inspectors' and Sandia Consultants' review and evaluation of test program 58939 being conducted for General Electric determined that two motors failed during LOCA testing of the Limitorque SB-3-150 motor actuator. Wyle and their customers are currently reviewing and evaluating the failures. The NRC Inspector will follow-up on these failures during a future inspection at GE.

ORGANIZATION: WYLE LABORATORIES  
NORCO, CALIFORNIA

REPORT  
NO.: 99900905/85-01

INSPECTION  
RESULTS:

PAGE 5 of 5

The NRC Inspectors and Sandia Consultants also observed a portion of the continuing test, inprocess functional test during LOCA, of a third motor of the Limitorque SB-3-150 Motor Actuator. One opening and one closing of the Motor Actuator was conducted during the observation.

PERSONS CONTACTED

Company WYLE LABS NORCO

Dates 14 MAY 1985

Docket/Report No 99900905/85-01

Inspector

Page 1 of 1

X Pre-Inspection Conference

### Post-Inspection Conference

NAME(Please Print)

TITLE (Please Print)

ORGANIZATION(Please Print)

[illegible]

PERSONS CONTACTED

Company WYLE LABS NORCO

Dates 16 MAY 1985

Docket/Report No. 99900 905/85-01

Inspector

Page 1 of 1

## Pre-Inspection Conference

X Post-Inspection Conference

NAME(Please Print)

TITLE (Please Print)

ORGANIZATION(Please Print)

[illegible]

PERSONS CONTACTED

Company WYLE LABS NORCO

Dates 14-16 MAY 1985

Docket/Report No. 99900905/85-01

Inspector R. N. : MOIST

Page 1 of 1

NAME(Please Print)

TITLE (Please Print)

ORGANIZATION(Please Print)

[illegible]

PERSONS CONTACTED

Company Wyle, Norco

Dates 5/14-16/85

Docket/Report No. 99900905-85-01

Inspector Dandini/Richards

Page 1 of 1

NAME(Please Print)

TITLE(Please Print)

ORGANIZATION(Please Print)

[illegible]

PERSONS CONTACTED

Company Wyle Laboratories, Norco

Dates May 14-17, 1985

Docket/Report No. 39900905/85-01

Inspector G. T. Hubbard

Page 1 of 1

NAME(Please Print)

TITLE(Please Print)

ORGANIZATION(Please Print)

[illegible]

**SCOPE** INSPECTION

PAGE 1 OF 1

[illegible]

**TYPE OF DOC:**

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

LTR - LETTER

IR - TEST REPORT  
QP - QUALIFICATION PLAN  
TLS - TEST LOG SHEET  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

INSPECTOR Richard L. Richards  
SCOPE Wyle Neco - EQ

DOCUMENTS EXAMINED

DOCKET NO. 99900905  
REPORT NO. 85-01  
PAGE 1 OF 1

ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
1	TP	Wyle #352	B	10/2/84	Test Plan and Procedure for Environmental Qualification of SB-3-150(AC) Motor Actuator for GE Nuclear Environmental Recirculation Test Report of Limitorque SB-3-150(AC) motor actuator (S/N 365653) Product Performance Qualification Spec (PPQS) for High Pressure Core Spray Valves and Actuators
2	Report	Wyle 358939	0	10/11/84	Reliance Electric Co. Report of Disassembly and Examination of an AC Polyphase Induction Motor Qualification Test Motor for Limitorque Corporation following a Motor Disassembly and Environmental Test of a Limitorque SB-3-150 (AC) motor Actuator
3	Spec	23A1361	1	10/11/84	Subject: Service Voltage Supply for Limitorque SB-3-150(AC) Motor Actuator
4	Report	Reliance S-1-YG	0	2-26-85	Open torque switch causing failure of valve to close
5	LTR		0		Working order concerning Reliance AC Motor assembly
6	NOD		0	10-9-84	
7	LTR		0	3-25-85	

TYPE OF DOC:

DWG - DRAWING  
SPEC - SPECIFICATION  
PRO - PROCEDURE  
QA - QA MANUAL  
QC - QC DOCUMENT  
PO - PURCHASE ORDER  
INH - INTERNAL MEMO

LTR - LETTER  
TP - Test Plan  
REP - Report  
NOD - Notice of Discontinuation

INSPECTOR Richards  
SCOPE Wyle Dorco - EQ

DOCUMENTS EXAMINED

DOCKET NO. 99900905  
REPORT NO. 85 - 01  
PAGE 2 OF 2

ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
8	REP	58801	-	4/2/84	Qualification Testing of One Operator Assembly and One Servo Amplifier for Borg-Warner Corporation
9	DS	in file 58801	-	2/84	Data Sheets (circular strip charts) document, temperature and RH for DBE <del>run</del> above
10	PO	#33891	0	9/16/82	PO for qualification test Program
11	PO	"	1	7/25/83	"
12	PO	"	2	12/22/83	"
13	PO	"	3	7/2/84	"
14	PO	"	4	7/20/84	"
15	PO	"	5	9/25/84	"
16	CC	wyle # 173	-	3/22/84	Certificate of Compliance for one Operator <sup>Part # 85280</sup> Assembly and one Servo Amplifier
17	PRO	#1964	-	12/3/82	Generic Qualification Test Procedure for <sup>in part</sup> Modulating Actuators P/W 85280 (includes next two references)
18	PRO	548-9311	A	8/17/82	Nuclear Qualification of a Modulating Electro-

TYPE OF DOC:

DWG - DRAWING  
SPEC - SPECIFICATION  
PRO - PROCEDURE  
QA - QA MANUAL  
QC - QC DOCUMENT

LTR - LETTER  
REP - Report  
DS - Data Sheets  
CC - Certificate of Compliance

INSPECTOR Richards/Dandini  
 SCOPE Wyle, Waco

DOCKET NO. 99900908  
 REPORT NO. 85 - 01  
 PAGE    OF   

DOCUMENTS EXAMINED

ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
19	REP	528-0847	B	8/18/85	Hydraulic Operator System P/N 85280 (in part) Nuclear Equipment Analysis Report for (in part) Modulating Electro-Hydraulic Operator System P/N 852
20	PO	265-84649	00	6-29-84	EQ Testing of Limiting SMB-0-25/H4BC Motor Actuator
21	PO	265-84649	01	12-12-84	As above
22	TP	4354	B	8-24-84	Test Plan & Procedure for Environmental Qualification Testing of Limiting SMB-0-25/H4BC (AC) Motor Actuator for General Electric Company
23	REP	5841	A	1-11-85	Nuclear Environmental Qualification Test Report on Limiting SMB-0-25/H4BC (AC) Motor Actuator

TYPE OF DOC:

DWG - DRAWING  
 SPEC - SPECIFICATION  
 PRO - PROCEDURE  
 QAH - QA MANUAL  
 QCD - QC DOCUMENT

TR - LETTER  
 REP - Report  
 TP - Test Plan

INSPECTOR G.T. Hubbard

SCOPE \_\_\_\_\_

DOCUMENTS EXAMINED

DOCKET NO. 99900905/REPORT NO. 85 - 01PAGE 1 OF     

ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
1	PRO	4352	-	7/2/84	Test Plan & Procedure for Environmental Qualification Testing of SB-3-150 (AC) Motor Actuator for General Electric Company
2	PRO	4352	B	10/2/84	Test Plan & Procedure for Environmental Qualification Testing of SB-3-150 (AC) Motor Actuator for General Electric Company
3	PO	62613-5587		4/29/85	Customer Purchase Order for LOCA Testing of Electro-Hydraulic Actuator, Job # 53309
4	File	DE-53309		4/85	Job File for Job # 53309
5	PRO	26333-31	E	12/12/83	Qualification Plan for Job No. 58681, Customer P.O. 58040
6	File	ND-58681		08/81	Job File for Job 58681
7	Rpt	58681		10/19/84	Qualification Report on Electrical Penetrations, Job # 58681
8	File	ND-58883		10/83	Job File for Job # 58883
9	PRO	566-1674	A	5/1/84	Test Plan for cable class I/E qualification, Job # 58883
10	PO	B-22403		10/27/83	Customer Purchase Order for Job # 58883
11	Rpt	58883-1		11/26/84	Test Report on Conduit Seals Qualification, Job # 58883
12	Rpt	58883		8/24/84	Test Report on Cable Qualification, Job # 58883
13	PRO	518-3-B	B	3/15/82	Document Control Center Log Procedure (Standard Practice Procedure)
14	<del>RPT</del> PRO	518-6-A	<del>B</del>	4/19/85 2/21/83	Report Format Standing Operating Procedure

## TYPE OF DOC:

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

LTR - LETTER

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



## ENCLOSURE B

FORM 700 A  
8-11  
NRC 0838

INSPECTOR'S REPORT  
(Continuation)

Office of Inspection and Enforcement

DOCKET NO. (8 digits) OR LICENSE NO. (BY PRODUCT) (13 digits)										REPORT		MODULE NUMBER		VIOLATION SEVERITY OR DEVIATION		SITE RELATED	
99900905										8501		0191011718		1 2 3 4 5 6		A C B D	
										A							
										B							
										C							
										D							

VIOLATION OR DEVIATION (Enter up to 2400 characters for each item. If the text exceeds this number, it will be necessary to paraphrase. Limit lines to 50 characters each.)

OCOM 2

CONTRARY TO CRITERION V OF Appendix B to 10CFR PART 50 and SECTION 11, PARAGRAPH 11.10 OF WYLE LABORATORIES Quality Assurance MANUAL REVISION E dated 1 MARCH 1985, TEST REPORTS 58883-1 dated 20 NOVEMBER 1984 and 58883 dated 24 AUGUST 1984 documented instances where deviations to the prescribed requirements occurred during testing but NOTICES OF DEVIATION were not written.

NRC FORM 700 A (11-81) E MC 0636  <b>INSPECTOR'S REPORT</b> (Continuation) Office of Inspection and Enforcement	DOCKET NO. (8 digits) OR LICENSE NO. (BY PRODUCT) (13 digits)										REPORT		MODULE NUMBER				VIOLATION SEVERITY OR DEVIATION 0		SITE RELATED A C B D	
	99900905										8501		099011718							
											A		1 2 3 4 5 6							
											B									
											C									
										D						D				

VIOLATION OR DEVIATION (Enter up to 2400 characters for each item. If the text exceeds this number, it will be necessary to paraphrase. Limit lines to 50 characters each.)

OCOM 3

CONTRARY TO CRITERION I OF APPENDIX B TO 10CFR PART 50 and SECTION 5 paragraph 5.0 of LOYLE LABORATORIES Quality Assurance MANUAL REVISION E dated 1 MARCH 1985 there was no documented procedure for the control of mixing the chemical spray solution used during design basis event testing and monitoring the solution's PH.