

TITLE: TRAINING AND QUALIFICATION OF Q.A. PERSONNEL

GENERAL NOTE: Quality Assurance Instructions are for internal use only. They are explanatory documents that either explain in greater detail how to implement certain requirements of the Quality Assurance Manual or explain other systems and controls not required by the Quality Assurance Manual. These instructions shall in no way be in non-conformance with, and shall always be subservient to, the Quality Assurance Manual, QAM-1002.

1.0 SCOPE - This QAI shall establish the procedures and processes that shall be followed to train and qualify Q.A. personnel in the specific technical requirements, standard and functions of a quality program related to job functions. Specific qualifications to meet ANSI N45.2.6 shall be followed as defined in Para. 5.0 as applicable to job functions.

2.0 RESPONSIBILITY

2.1 The Manager, Quality Assurance shall be responsible for the indoctrination and training of individuals in the area of Quality Control/Assurance. This shall include instruction at Goulds Pumps, Inc. and may include additional training through and independent source.

3.0 TRAINING PROCESSES - IN-HOUSE

3.1 A general Q.A. Seminar for Quality Assurance personnel shall be conducted on an annual basis to indoctrinate and train personnel in the policies, procedures and requirements based upon Goulds Q.A. Manual, ASME, ANSI and 10CFR50 requirements.

3.1.1 An outline of the seminar shall be prepared by the Manager, Quality Assurance..

4.0 QUALIFICATION OF PERSONNEL

4.1 On-the-job training shall be per job descriptions and based upon satisfactory performance by the individual. This on-the-job training shall be reviewed periodically by the Manager, Quality Assurance to assure individuals are sufficiently trained and continuous satisfactory performance is being obtained. Documented evidence shall be prepared for on-the-job training records.

5.0 OTHER TRAINING PROCESSES

5.1 Quality Assurance personnel shall be able to participate in any of the following areas:

5.1.1 Approved on-the-job training programs through the Federal or State governments or veteran administration programs.

DATE OF ORIGINAL ISSUE 4/11/77

DATE OF REVISION 6/18/80

APPROVED BY:
Q.A. MANAGER R. H. Hord

REVIEWED BY P. A. Hanson

8310130254 830919
PDR ADCK 05000400
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5.0 continued

- 5.1.2 Independent participation in seminars through organizational sponsorship, universities, colleges, schools, etc.
- 5.1.3 Independent participation in organizational conventions, etc. where specific seminars/workshops are job-related.
- 5.2 The Manager, Quality Assurance shall review these training processes and determine applicability to job functions and acceptance as a training basis.

6.0 CERTIFICATION REQUIREMENTS TO MEET ANSI N45.2.6

- 6.1 Individuals shall be certified to meet the following levels as defined in ANSI N45.2.6, 1973 Edition provided education, job experience and training and successful minimum annual eye examination is satisfactory (Ref: ANSI N45.2.6, 1973 Edition).

Hydrotester	Level I
Performance Tester	Level I
Visual Inspector	Level II
Dimensional Inspector	Level II
PT Inspector	Level II
MT Inspector	Level II
UT Inspector	Level II
Evaluate Hydrotests	Level II
Evaluate Performance Tests	Level II
Evaluate Visual Results	Level II
Evaluate Dimensional Results	Level II
Evaluate PT	Level II
Evaluate MT	Level II
Evaluate UT	Level II
Approve Inspection/Test Procedures	Level III

- 6.2 Evaluation shall be required every two (2) years to maintain certification.
- 6.3 The Manager QA shall be responsible for certification and recertification.
- 6.4 Attachment#1 - Certification of Qualification Form.

7.0 RECORDS

- 7.1 The Manager, QA shall maintain a current file on each individual's training and qualification record.
- 7.2 Record retention shall be maintained per Goulds Q.A. Manual 1002.
- 7.3 All personnel qualification records shall be maintained and updated on an annual basis, or to meet ANSI N45.2.6, every two (2) years.
- 7.4 Qualification shall not be transferrable to another company.

P.O. Box 330
240 Fall Street
Seneca Falls, New York 13148 USA
315-568-5811
TELEX: 817-290. Answerback GOULDPUMPS SEFS
Cable: GOULDPUMP



CERTIFICATE OF QUALIFICATION

This Certificate of Qualification shall meet the requirements of ANSI N45.2.6, 1973 edition.

1. Employer: Goulds Pumps, Inc.
Engineered Products Division
240 Fall Street.
Seneca Falls, New York 13148

2. Employee Name: _____

A. Job Title: _____

B. Union Job Code Number (if applicable) _____

3. Activity Qualified to Perform: (Check applicable boxes)
- | | |
|---|-----------|
| <input type="checkbox"/> Hydrotester | Level I |
| <input type="checkbox"/> Performance Tester | Level I |
| <input type="checkbox"/> Visual Inspector | Level II |
| <input type="checkbox"/> Dimensional Inspector | Level II |
| <input type="checkbox"/> PT Inspector | Level II |
| <input type="checkbox"/> MT Inspector | Level II |
| <input type="checkbox"/> UT Inspector | Level II |
| <input type="checkbox"/> Evaluate Hydrotests | Level II |
| <input type="checkbox"/> Evaluate Performance Tests | Level II |
| <input type="checkbox"/> Evaluate Visual Results | Level II |
| <input type="checkbox"/> Evaluate Dimensional Results | Level II |
| <input type="checkbox"/> Evaluate PT | Level II |
| <input type="checkbox"/> Evaluate MT | Level II |
| <input type="checkbox"/> Evaluate UT | Level II |
| <input type="checkbox"/> Approve Inspection/Test Procedures | Level III |
- Levels certified to meet
ANSI N45.2.6, 1973 edition.

4. Qualification Certified _____

Signature

Date

5. Evaluation Every 2 Years
Recertification:
(Signature & Date)

Resume and job description attached. Eye Examination required on a min. annual basis.
If required, training records available.



210.49

FORM NPV-1 (Back)

(210.49)

Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting			
4 Bolts IDECJW	ASME SA193 GR. B8	DeLackner	
19 Studs IDECCE	ASME SA193 GR. B7	DeLackner	
4 Studs IDECHI	ASME SA193 GR. B7	DeLackner	
23 Hex Nuts IDFA-B7	ASME SA194 GR. 2H	DeLackner	
(d) Other Parts			
3 Pipe Plugs IDECVQ	ASME SA105	Capitol	
2 Pipe Plugs IDFK609	ASME SA105	Pennsylvania Machine Works	

9. Hydrostatic test. 338 psi.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this pump, or valve, conforms to the rules of construction of the ASME Code for Nuclear Power Plant Components, Section III, Div. 1, Edition 1971.

Addenda Summer 1973, Code Case No. 1677, Date 6/30/80

Signed Goulds Pumps, Inc. by P.O. Honeoy

Our ASME Certificate of Authorization No. N-1006, to use the "N" symbol expires 6/16/81.

CERTIFICATION OF DESIGN

Design information on file at Goulds Pumps, Inc., 240 Wall St., Secaucus, N.Y. 13149

Stress analysis report (Class 1 only) on file at N/A

Design specifications certified by (1) Joseph J. Gioia

PE State North Carolina No. 8330

Stress analysis certified by (1) N/A

PE State N/A Reg. No. N/A

(1) Signature not required, List name only.

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of New York and employed by Walsham, Mass. have inspected the pump, or valve, described in this Data Report on June 30 1980, and state that to the best of my knowledge and belief, the Manufacturer has constructed this pump, or valve, in accordance with the ASME Code, Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date June 30 1980

Inspector Commissions N.B. 4274
(Not B.U., State, Prov. and No.)

FORM NPV-1 MANUFACTURERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES

• (As Required by the Provisions of the ASME Code, Section III, Div. 1)

1. Manufactured by Goulds Pumps, Inc., 240 Fall Street, Seneca Falls, New York 13148
(Name and Address of Manufacturer)
2. Manufactured for Carolina Power & Light Co., Elasco Services, Inc., Agent*
(Name and Address of Purchaser or Owner)
3. Location of Installation Carolina Power & Light Co. Shearon Harris Nuclear Plants**
(Name and Address)
4. Pump or Valve Pump Nominal Inlet Size 14 .. Outlet Size 12
(Inch) (Inch)

	(a) Model No., Series No. or Type	(b) Manufacturers' Serial No.	(c) Canadian Registration No.	(d) Drawing No.	(e) Class	(f) Natl. Id. No.	(g) Year Built
(1)	3405	N232B724-2	N/A	N232724#1	3	625	1980
(2)							
(3)							
(4)							
(5)							
(6)							
(7)	*21 West Street, 10th Floor, New York, New York, 10006						
(8)	** AETN: Mr. R. M. Parsons, Site Manager						
(9)	New Hill, Wake County, North Carolina						
(10)	3 Miles Southeast on North Carolina State Road #1134						

5. P.O. NY-435042 Service: Water Booster Pump
1B-SB (Brief description of service for which contract was designed)

6. Design Conditions 225 (Pressure) 140 psi (Temperature) 140 °F or Valve Pressure Class N/A (1)
7. Cold Working Pressure N/A psi at 100°F.
8. Pressure Retaining Piece.

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
1-L.H. Casing	G-785	ASME SA216 GR. WCB	Empire Steel
1-U.H. Casing	G-7811	ASME SA216 GR. WCB	Empire Steel
4-Gland Nuts	G-781	ASME SA216 GR. WCB	Empire Steel
	G-7822	ASME SA216 GR. WCB	Empire Steel
	G-7823	ASME SA216 GR. WCB	Empire Steel
	G-7824	ASME SA216 GR. WCB	Empire Steel
(b) Forgings			

(1) For manually operated valves only.

* Supplemental sheets in form of lists, sketches or drawings may be used provided (1) size is 8-1/2" x 11", (2) information in Items 1, 2 and 5 on this data report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at top of this form.

(3771)

This form (F 00037) may be obtained from the Order Dept., ASHP, 346 E. 47 St., New York, N.Y. 10017

210,99

FORM NFV-1 (10-64)

Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting			
4-Bolts 10NCJW	ASME SA 193 GR. 88	Delackner	
19-Studs 10CCE	ASME SA 193 GR. 87	Delackner	
4-Studs 10CHH	ASME SA 193 GR. 87	Delackner	
23-Hex Nuts 10A-87	ASME SA 191 GR. 2H	Delackner	
(d) Other Parts			
3-Pipe Plugs 10CFO	ASME SA 105	Capitol	
2-Pipe Plugs 10K609	ASME SA 105	Pennsylvania Machine Works	
FOR INFORMATION ONLY			

8. Hydrostatic test 338 psi.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this pump, or valve, conforms to the rules of construction of the ASME Code for Nuclear Power Plant Components, Section III, Div. 1, Edition 1971 Addenda Summer, 1973, Code Case No. 1677, Date 10/17/80.

Signed Goulds Pumps, Inc. by G. A. Hanning
(Manufacturer)

Our ASME Certificate of Authorization No. 11-1096 to use the III symbol expires 6/16/81
(Date)

CERTIFICATION OF DESIGN

Design information on file at Goulds Pumps, Inc., 240 Fall Street, Seneca Falls, New York 13148
Stress analysis report (Class 1 only) on file at N/A

Design specifications certified by (1) Ralph J. Giorgio
PE State N. Carolina Reg. No. 8330

Stress analysis certified by (1) N/A
PE State N/A Reg. No. N/A

(1) Signature not required. List name only.

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid certification issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of New York and employed by Welham, Mass. have inspected the pump, or valve, described in this Data Report on Oct 15, 1980, and state that to the best of my knowledge and belief, the Manufacturer has constructed this pump, or valve, in accordance with the ASME Code, Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 10-15-80 1B
[Signature] (Inspector) Commissions NO 8563
(NBT Bd., State, Prov. and No.)

FORM NPV-1 MANUFACTURERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES
(As Required by the Provisions of the ASME Code, Section III, Div. 1)

1. Manufactured by Goulds Pumps, Inc., 240 Fall Street, Seneca Falls, New York 13142
(Name and Address of Manufacturer)

2. Manufactured for Carolina Power & Light Co., Brasco Services Inc., Agent, 21 West St. *
(Name and Address of Purchaser or Owner)

3. Location of Installation Carolina Power & Light Co.; Shenoxon Harris Nuclear Plants **
(Name and Address)

4. Pump or Valve PUMP Nominal Inlet Size 14 Outlet Size 12
(inch) (inch)

(a) Model No. Series No. or Type	(b) Manufacturers' Serial No.	(c) Canadian Registration No.	(d) Drawing No.	(e) Class	(f) Nat'l. Std. No.	(g) Year Built
(1) <u>3405</u>	<u>N232H724-1</u>	<u>N/A</u>	<u>N2327241</u>	<u>3</u>	<u>624</u>	<u>1980</u>
(2)
(3)
(4)
(5) <u>* 10th Floor, New York, New York 10006</u>
(6) <u>** Attn: Mr. R.M. Parsons, Site Manager</u>
(7) <u>New Hill, Wake County, North Carolina</u>
(8) <u>3 miles southeast on North Carolina - State Road #1134</u>
(9)
(10)

5 P.O.# NY-435042

Service: Water Rooter Pump
(Brief description of service for which equipment was designed)

Item# 1A-SA

6. Design Conditions 225 psi 140 °F or Valve Pressure Class N/A (1)
(Pressure) (Temperature)

7. Cold Working Procedure N/A psi at 100 f.

8. Pressure Retaining Pincoo

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
3 L.H. Casing G-7816	ASME SA216 GR. WCB	Empire Steel	
1 U.H. Casing G-7813	ASME SA216 GR. WCB	Empire Steel	
4 gland flange G-7817	ASME SA216 GR. WCB	Empire Steel	
G-7818	ASME SA216 GR. WCB	Empire Steel	
G-7819	ASME SA216 GR. WCB	Empire Steel	
G-7820	ASME SA216 GR. WCB	Empire Steel	
(b) Forgings			

(1) For manually operated valves only.

¹ Supplemental sheets in form of lists, sketches or drawings may be used provided (1) size is 8-1/2" x 11", (2) information in items 1, 2 and 6 on this data report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at top of this form.

(377)

This form (100037) may be obtained from the Order Dept., ASME, 345 E. 47 St., New York, N.Y. 10017

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Shearon Harris Nuclear Power Plant
Draft SER Open Item No. 354
NRC Question 210.50

Pump Anchor Bolts

The Seismic Stress Analysis ME-529 dated 4/14/78 implies that the anchor bolts are "A-193-B7" bolts. What is the anchor bolt material and how are they attached to the floor?

RESPONSE:

Anchor bolts are ASTM A-193 Gr.B7 bolts which is low alloy steel bolting material for high temperature service. Gr. B7 is chromium Molybdenum. Pump is located in Reactor Aux. Bldg., Elevation 236'. Bolts are 7/8" diameter, 2'6" long embedded in concrete, 2'2" with anchor plate at end 4" x 4" x 1/2".

Anchor bolts material and size are specified by vendor. Anchor Bolt loads are calculated in seismic report ME-529 paragraph 5.3 and page 17, (attached).

Anchor bolts and nuts are field supplied items.



ALIS ④	MP	1735 LB.	1460 LB.
	1500 LB.	1500 LB.	
	BEDPLATE	1075 LB.	1075 LB.
	TOTAL ②	4310 LB.	4035 LB.

COUPLING SPECIFICATIONS	
MFR.	FALK
TYPE	T10
SIZE	80T10

CERTIFIED DRAWING
Approved For Construction Purpose
GOULDS PUMPS INC.
SENECA FALLS, N.Y.
MAY 31, 1978
Signed: *A.R. Nyatt*

BOLT DATA			
	SIZE IN.	MATERIAL ASTM NO.	TORQUE (FT. LB.)
FOUNDATION	7/8	A193-B7	427

MAXIMUM ANCHOR BOLT LOADS	
SHEAR	TENSION
5598 LBS	13244 LBS

LDS SERIAL NO. N2328724-1-2-3-4
TOMER CAROLINA POWER & LIGHT CO.
P.O. NO. NY-435042 ITEM No 2
TRACT NO. CAR-1364
NO 1A-SA, 1B-SB, 2A-SA, 2B-SB
RVCE SERVICE WATER BOOSTER PUMPS

IN BY: J. VELTE DATE: 4-11-74 DWG. NO. N232724 #1 REV. 9
KED BY: DRM DATE: 4-11-74

ADDRES 216.50
STANDARD DISTRIBUTION
-2297 Rg
S.R. CORRECTED BOARD DRAWING
TAG No. 2 APPD. WAS A. 2
P.D. ITEM 23 3 & 1
REV. DATE BY DESCRIPTION
EBASCO REVISIO

EBASCO REVISION 1/31/83
1364-2297 Rg
CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT
3609 MW(e) - UNITS 1-4 - 1984-1990
PO NY 435042 ITEM 2
A
DRAWING REVIEW
NO COMMENTS, PRINT TO VENDOR 1
COMMENTS AS NOTED, PRINT TO VENDOR 2 X
DRAWING NOT APPLICABLE, PRINT TO VENDOR 3
NO COMMENTS, NO PRINT TO VENDOR 4
FOR INFORMATION ONLY 5
B
FABRICATION
NO FURTHER REPRODUCIBLE REQUIRED 1 X
SUBMIT REVISED REPRODUCIBLE 2
NO FURTHER REPRODUCIBLE REQUIRED 3
SUBMIT REVISED REPRODUCIBLE 4
SERVICE WATER BOOSTER
PUMP OIL UNIT 1, 2 RAB
EL 236
3/2/83
REVIEWED BY: A.R. EQ DATE: 1/14/80 ORG. DIV: M
REVIEW OF THIS DOCUMENT WITH OR WITHOUT COMMENTS IS ONLY FOR GENERAL CONFORMANCE WITH EBASCO PREPARED SPECIFICATIONS AND FOR CONFIRMATION OF PHYSICAL INTERPRETATION OF ITEMS SHOWN WITH RELATION TO SYSTEMS. SUCH REVIEW SHALL IN NO WAY RELIEVE CONTRACTOR OF HIS RESPONSIBILITY FOR ENGINEERING, DESIGN, WORKMANSHIP, MATERIAL, PERFORMANCE OF EQUIPMENT AND MATERIAL, AND ALL OTHER LIABILITY UNDER THE CONTRACT.
EBASCO SERVICES INCORPORATED
AGENT



Q: 210.50

Resultant 22,259 psi tensile 6,210 psi shear
allowable stresses for SA-325 bolts are 12,320 psi shear and 40,000 psi
tensile per Subsection NF.

5.3 Anchor Bolts

The support reactions are given on pages A-3 and A-4. The anchor bolts are 7/8" in diameter. The Y force imparts tensile load and the X and Z forces impart shear. The max. tensile force is at joint 32 and max. shear at joint 32.

	Tensile, lbs.	Shear, lbs.	
		X	Z
Loading 3, Lateral X	.335	589	186
Loading 4, Lateral Z	1,258	30	632
Loading 1, Nozzle	<u>11,651</u>	<u>778</u>	<u>4,603</u>
Totals	13,244 lbs.	1,397	5,421
Resultant	13,244 lbs.	5,598 lbs.	

The tensile stress is:

$$S = \frac{13244}{.6013} = 22,026 \text{ psi}$$

The shear stress is:

$$V = \frac{5598}{.6013} = 9,310 \text{ psi}$$

The allowable stresses for A-193-B7 bolts are: 12,500 psi shear and 25,000 psi tensile per ASME Code Appendix XVII and Subsection NF.

5.4 Shaft Stress

The shaft is shown on the computer model, page 5, as members 60 through 62. The computer output for stress is given on pp. A-5 through A-7. The maximum combined stress occurs in member 62 at joint 41. The shearing stress due to torsion is:

$$V = \frac{7079}{2(.858)} = 4,125 \text{ psi}$$

Shearon Harris Nuclear Power Plant
Draft SER Open Item No. 354
NRC Question 210.51

(Valve) Seismic Qualification of Motor Operators

The Design Specification CAR-SH-M-44, Rev. 13, dated 1/28/83 (4.2) states that the Seller shall indicate in his bid package details of how qualification shall be provided and the Seller shall demonstrate the equipment's ability to meet the requirements that the operator shall start, run or stop during specified earthquake loading. Describe the data furnished by the Seller to assure that the motor operators used on Seismic Category I valves meet 4.2d-3 of the Specification.

RESPONSE:

The data/description furnished by the Seller to meet Specification 4.2 requirements for the motor operators is provided in the following Seller's documents (attached):

- | | |
|---|---|
| (a) Report R0037 | Seismic Qualification Envelope - Limitorque Valve Actuators. |
| (b) Acton Report
14331-2 Rev. 1 | Seismic Vibration Testing of One (1) Limitorque SMB-000/HOBC Actuator. |
| (c) Acton Report
14331-3 Rev. 1 | Seismic Vibration Testing of One (1) Limitorque SMB-000/HOBC Actuator with Seismic Adaptor. |
| (d) Acton Report
14801-1 Rev. 1 | Seismic Vibration Testing of Limitorque SMB-1/H3BC Actuators. |
| (e) Aero Nav Report
5-6167-5, dated
12/5/75 | Report of Fragility Test on SMB-1-25/H4BC with Standard Cast Adaptor. |

