CURTISS WRIGHT Flow Control Company ENERTECH

CORRECTIVE ACTION REQUEST

ASME ☐ NON-ASME ☒

CAR # 2032 Date Issued: 11/5/12

Internal / External : Internal

Originated By: John DeKleine Title: Director Quality Assurance

Responsible Department:	Operations
Program/Regulatory Reference:	NRC Routine Vendor Inspection reference Docket number 999013777, Report number 2012-201 Nonconformance -02 required a satisfactory review for suitability of application safety related materials.
Description of Deficiency:	Contrary to the above, during the NRC Inspection it revealed Enertech's technical justifications for addressing acceptance of material certification and the basis for the use of sampling when perform dedication activities were not documented.

Recommendations:

1. Establish cause
2. Prepare appropriate corrective and preventative actions

Response Due: 11/30/12

This section is to be completed by the referenced Department Manager/Supplier Representative only. ***You are hereby requested to investigate the above described condition and identify the cause, the fix, and the corrective action taken to preclude recurrence. Please complete this section of the form, or an attachment addressing the concern, and return by the specified Response Due Date.***

Cause & Extent of Noted Deficiency:	While Engineering technical justification for material verification and sampling were documented in CGI Evaluating and EOP 3140, it did not meet the NRC expectations, due to its generic nature.
Corrective/Remedial Action to Correct the Deficiency:	Document the technical justification for acceptance method of material and sampling methods in CGI evaluation MA24945 (Diffuser) and MA24946 (Retaining Ring), in accordance with identified critical characteristics, including the requirements for Lot homogeneity for each sampling plan. Correct CGI Dedication Plan D8740S for Lot 40316.
Corrective/Preventative Action to Preclude a Reoccurrence	Revise EOP 3140, to state the requirements for satisfactory documentation of technical justification for acceptance and sampling methods. Revise CGI Dedication Plan D8740S. Provide training on revised EOP.

Proposed Completion Date: 12/31/2012

Responding Person's Signature/Title _____ Date: 11.20.12

Date CAR Response Received in Enertech QA Department: 11-20-12

QA Evaluation & Approval of Response _____ Date: 11-20-12

Form 16-1 Rev 0

CURTISS WRIGHT Flow Control Company ENERTECH

CORRECTIVE ACTION REQUEST

2032

Enertech's Verification of Corrective Action Taken:

Method of Verification ☐ Re-Audit ☑ Administrative Review of Objective Evidence

Summary of Verification:

Verified revision to EOP and subsequent training records.

Verification Date:	12-21-12	By:	Jack L Guy	Title:	VP-OPEX

Enertech Management Review for 10CFR Part 21 Applicability: ☐ Applicable; ☑ Not Applicable

Review performed By: Jack L. Guy

Results of Verification:

☑ Satisfactory [ ] Incomplete [ ] Unsatisfactory*

[ ] Remains Open ☑ Closed (* Additional Action Required)

Closed Date:	12-21-12	By:	Jack L Guy	Title:	VP-OPEX

[redacted]

[redacted]

[redacted] _____

[redacted] _____

[redacted] _____

[redacted] _____

[redacted] _____

CURTISS WRIGHT Flow Control Company
ENERTECH
2950 Birch Street, Brea, CA 92821 U.S.A.
Phone: 714.528.2301 Fax: 714.528.0128

CGI EVALUATION - DIFFUSER, PASSIVE N. O. NOZZLE CHECK VALVE

RECORD OF REVISION

REV LEVEL	ECO NO.	PREPARED BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
A	5-21537		11/16/2012		11/16/12		11/16/12

ORIGINAL

CURTISS WRIGHT Flow Control Company
ENERTECH
2950 Birch Street, Brea, CA 92821 U.S.A.
Phone: 714.528.2301 Fax: 714.528.0128

CUSTOMER	REV.	DRAWING NUMBER	
STANDARD	B	MA24946	Page 2 of 11

CGI EVALUATION - RETAINING RING, PASSIVE N. O. NOZZLE CHECK VALVE

RECORD OF REVISION

REV LEVEL	ECO NO.	PREPARED BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
A	5-21546	IJ Silverman	11/21/2012	H Mkrtchyan	11/26/12	P Schaller	11/30/12
B	5-21663	IJ Silverman	12/20/2012		12/21/12		12/21/12

ORIGINAL

CURTISS WRIGHT Flow Control Company ENERTECH

CGI DEDICATION PROCEDURE

INFORMATION ONLY

Description: Casting, Diffuser

Production Order No. _____

Design Function: Maintain disc shaft and spring in proper position and orientation for correct operation.
Safety Function: Same as design function.

Functional Mode (NP-6629): ___ Active ___ Passive _X_ Not Applicable **Reference CGI Evaluation:** MA24945 – Diffuser, Passive N.O. Nozzle Check Valve

Qualifications:

___ Environmentally qualified per _____ _X_ Environmental qualification does not apply.
___ Seismically qualified per _____ _X_ Seismic qualification does not apply.
___ Original Qualifications are maintained by compliance to the original design/drawing requirements.

Eligibility of Commercial Grade item:

_X_ Not subject to design specification requirements that are unique to nuclear facilities.
_X_ Used in applications other than nuclear facilities.
_X_ Purchased on the basis of specifications set forth in the manufacturer's published product description.

Basis for Selection of Critical Characteristics for Acceptance:
Material: Provides assurance that the item material has not changed such that the design basis or the original qualification may become invalid.
Dimensions & Configuration: Provides assurance that the item has not changed as to jeopardize its ability to interface with its parent component.
Functions: Provides a reasonable assurance that the item will operate within its design parameters.
Markings: Provide an indication if the item is not the one purchased for the intended application.

The selected Acceptance Method, Sampling Plan and/or Notes apply only when invoked.

Acceptance Method:

1. Special Test and Inspections
2. Commercial Grade Survey
3. Source Inspection

Sampling Plan:

A. 100% (All items)
B1. EOP 3140, Tighten (Table -1)
B2. EOP 3140, Normal (Table -1)
B3. EOP 3140, Reduced (Table -1)
C. One sample per lot (destructive test or disassembly (Note 1) or CGI Survey)
D. EOP 3140, Normal (Table -2)

Notes:

1. Disassembly to access internal parts is not recommended. Lot homogeneity (EOP 3140) and testing of accessible items provide reasonable assurance that internal items materials are correct.
2. Assembly and Functional Test provide reasonable assurance that subcomponents are manufactured correctly and interface dimensions (i.e. connection ports) are correct.
3. Acceptance of commercial CMTR requires PMI, traceability marking on item and CMTR compliance with material specification.
4. Verification of other categories (i.e. material, dimensions, configuration and workmanship) provides reasonable assurance that the item will perform its function.
5. Verification of this critical characteristic is requested by Customer; it is not mandated by the referenced CGI Evaluation.

Rev.	ECO No.	Drawn By/Date	Checked By/Date	Approved By/Date
A	5-21632	12/21/12	12/21/12	12/21/12

For previous revision records see Document Control archive.

ORIGINAL

CURTISS WRIGHT Flow Control Company ENERTECH

CGI DEDICATION PROCEDURE

Description: Casting, Diffuser

Production Order No. 119185 · (Lot#40316)

Design Function: Maintain disc shaft and spring in proper position and orientation for correct operation.
Safety Function: Same as design function.

MA24945 11/16/12 11/16/12

Functional Mode (NP-6629): ___ Active ___ Passive _X_ Not Applicable **Reference CGI Evaluation:** MA22004 - Non-Pressure Retaining Valve Parts

Released For Manufacturing
Production or Purchase Order
Number 119185
Initial [illegible] Date MAY 18 2011

Qualifications:

___ Environmentally qualified per _____ _X_ Environmental qualification does not apply.
___ Seismically qualified per _____ _X_ Seismic qualification does not apply.
___ Original Qualifications are maintained by compliance to the original design/drawing requirements.

Eligibility of Commercial Grade item:

_X_ Not subject to design specification requirements that are unique to nuclear facilities.
_X_ Used in applications other than nuclear facilities.
_X_ Purchased on the basis of specifications set forth in the manufacturer's published product description.

Basis for Selection of Critical Characteristics for Acceptance:
Material: Provides assurance that the item material has not changed such that the design basis or the original qualification may become invalid.
Dimensions & Configuration: Provides assurance that the item has not changed as to jeopardize its ability to interface with its parent component.
Functions: Provides a reasonable assurance that the item will operate within its design parameters.
Markings: Provide an indication if the item is not the one purchased for the intended application.

UNCONTROLLED
Not Valid For Manufacturing

The selected Acceptance Method, Sampling Plan and/or Notes apply only when invoked.

Acceptance Method:

1. Special Test and Inspections
2. Commercial Grade Survey
3. Source Inspection

Sampling Plan:

A. 100% (All items)
B1. EOP 3140, Tighten (Table -1)
B2. EOP 3140, Normal (Table -1)
B3. EOP 3140, Reduced (Table -1)
C. One sample per lot (destructive test or disassembly (Note 1) or CGI Survey)
D. EOP 3140, Normal (Table -2)

Notes:

1. Disassembly to access internal parts is not recommended. Lot homogeneity (EOP 3140) and testing of accessible items provide reasonable assurance that internal items materials are correct.
2. Assembly and Functional Test provide reasonable assurance that subcomponents are manufactured correctly and interface dimensions (i.e. connection ports) are correct.
3. Acceptance of commercial CMTR requires PMI, traceability marking on item and CMTR compliance with material specification.
4. Verification of other categories (i.e. material, dimensions, configuration and workmanship) provides reasonable assurance that the item will perform its function.
5. Verification of this critical characteristic is requested by Customer; it is not mandated by the referenced CGI Evaluation.

Rev.	ECO No.	Drawn By/Date	Checked By/Date	Approved By/Date
0	INITIAL RELEASE	T. Rivera 5/4/11	R. Lee 5/4/11	5/4/11

For previous revision records see Document Control archive.

ORIGINAL

CURTISS WRIGHT
Flow Control Company
ENERTECH

ENERTECH Operating Procedure

EOP 3140	REV AK

Title: PROCEDURE FOR THE DEDICATION OF COMMERCIAL GRADE ITEMS/SERVICES

Prepared By: L. Beard Date: 5-21-93

Approved By: A. Shelcoviz David J. Powell Date: 5/24/93

QA Approval: J.I. Rosen Date: 24 May 93

RECORD OF REVISIONS

REV	DESCRIPTION	BY	DATE	APP'D	DATE	QA	DATE
0	Please refer to original cover sheet in archives for signatures and record of revisions.						
F							
G							
H							
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AH							
AI							
AJ							
AK	Revise para 4.2, 4.3 and 4.5; 8.3, 8.4.8, 8.4.10, 8.4.12 and 8.11	F.A.	12/21/12		12-21-12		12/21/12

CURTISS WRIGHT
Flow Control Company
ENERTECH

Brea, California 92821

QUALITY ASSURANCE PROGRAM

TRAINING RECORD

Written by:	Theresa Ruiz	Date:	12/21/12
Instructor:	Ararat Torosyan	Title:	Director of Operations
Date/Place/Duration:	, Brea Office, Hours		

Name (print or type)	Signature	Department/Title
Theresa Ruiz		Operations / Engineering Specialist
Richard Afsharian		Engineering / Project Manager
Felipe Alvarez		Engineering / Project Manager
Tsolag Apelian		Project Sales - Valves / Engineer
Jonathan Arndt		Engineering / Project Engineer
Alex Capatina		Engineering / Design Engineer
Viktor Genjoyan		Engineering / Design Engineer
Frank Goei		Engineering / Design Engineer
Brandon Hernandez		Engineering / Design Engineer
Ryan Hill		Engineering / Design Engineer
Serj Jarkhedian		Engineering / Design Engineer
Keith Johnson		Engineering / Project Engineer
Sirak Kalayci		Engineering / Engineering Intern
Kelvin Kao		Engineering / Project Engineer, Parts
Guy Levy		Engineering / Project Manager
Pascal Lim		Engineering / Project Engineer
Kevin Martin		Engineering / Project Manager
Robert McCandliss		Engineering / Engineering Intern
Kennie McCanless		Engineering / Project Manager
Haykaz Mkrtchyan		Engineering / Principal Analysis Engineer
Andrew Norris		Engineering / Manufacturing Engineer
Simon Rantisi		Engineering / Project Engineer
Joseph Rosca		Engineering / Project Manager
Marius Rosca		Engineering / Design Engineer
Carlos Sahagun		Engineering / Project Engineer
Avi Shelcoviz		Director, Technology, Manufactured Products
Ira Silverman	(independent review)	Project Sales - Valves /Senior Principal Engineer
Ben Snodgrass		Engineering / Engineering Intern
Sonali Vasa		Engineering / Engineer
Gnouni Yengoian		Project Sales – Pumps / Analysis Engineer

Lesson Content: (Include document revisions and/or dates, as applicable)

Review of CAR 2030

Review of CAR 2032, which includes the following:

EOP 3140, Rev AK – Dedication of Commercial Grade Items

CGI D8740S, Rev A – Casting, Diffuser

MA24945, Rev A - CGI Evaluation - Diffuser, Passive N.O. Nozzle Check Valve

MA24946, Rev B - CGI Evaluation - Retaining Ring, Passive N.O. Nozzle Check Valve

PATRICK SCHALLER

OPERATIONS / PROJECT MANAGER

CURTISS WRIGHT Flow Control Company ENERTECH

CORRECTIVE ACTION REQUEST

ASME ☐ NON-ASME ☐

CAR # 2033 Date Issued: Nov. 5, 2012

Originated By: John DeKleine Internal / External : Internal
Title: Director Quality Assurance

Responsible Department:	Design Engineering/Equipment Qualification
Program/Regulatory Reference:	NRC Routine Vendor Inspection reference Docket number 99901377, Report number 2012-201 Nonconformance -03. Procedure MA22989 rev B dated 4/30/12 states, in part, that " the purpose of this procedure ..is to successfully qualify the valve per ASME QME-1-2007 section QV-7500". Section QV-2000 states that " the purpose of section QV is …to demonstrate performance under **all** specified operating and design basis conditions.
Description of Deficiency:	Contrary to the above, during the NRC Inspection Enertech failed to establish a test program to ensure that it had identified **all** tests necessary to demonstrate that the valve will perform satisfactorily in service. Specifically Enertech's test program did not identify and perform qualification testing to demonstrate operability under all QME-1(2007Edition) specified operating and design basis conditions.

Recommendations:
1.

Response Due: 11/30/12

This section is to be completed by the referenced Department Manager/Supplier Representative only. ***You are hereby requested to investigate the above described condition and identify the cause, the fix, and the corrective action taken to preclude recurrence. Please complete this section of the form, or an attachment addressing the concern, and return by the specified Response Due Date.***

Cause & Extent of Noted Deficiency:

Enertech's test program and procedure MA22989 initially have not included high pressure impact test because we assumed (with concurrence from customer (WEC) system designer) that the other tests (flow test at low pressure and high pressure with no flow) in the procedure already enveloped all operating and design basis conditions per QME-1.

While this gap was identified during NRC meeting on 4/4/12 prior to testing, it was premature for Enertech to add the additional test to the procedure because the detailed where under review by the customer. The extent of this unique deficiency is limited to this valve only.

[redacted]

CURTISS WRIGHT Flow Control Company ENERTECH

CORRECTIVE ACTION REQUEST

2033

Corrective/Remedial Action to Correct the Deficiency:	Following receipt of WEC new PO on 10/4/12 , revise procedure MA22989 to include high pressure impact test of the valve.
Corrective/Preventative Action to Preclude a Reoccurrence	Provide training: 1. To qualification and project engineers to ensure written procedure reflects current customer requirements.
Proposed Completion Date:	12/31/12
Responding Person's Signature/Title	[redacted] Director Technology Date: 11/29/12

Date CAR Response Received in Enertech QA Department: 11-29-12

QA Evaluation & Approval of Response [redacted] Date: 11/29/12

Enertech's Verification of Corrective Action Taken:

Method of Verification ☐ Re-Audit ☒ Administrative Review of Objective Evidence

Summary of Verification:

Verified completed training per attached training records

Verification Date:	12/27/12	By:	[redacted]	Title:	VP-OPEX

Enertech Management Review for 10CFR Part 21 Applicability: ☐- Applicable; ☒- Not Applicable

Review performed By: [redacted]

Results of Verification:

☒ Satisfactory [ ] Incomplete [ ] Unsatisfactory*

[ ] Remains Open ☒ Closed (* Additional Action Required)

Closed Date:	12-27-12	By:	[redacted]	Title:	VP-OPEX

[redacted]

CURTISS WRIGHT Flow Control Company
ENERTECH
2950 Birch Street, Brea, CA 92821 U.S.A.
Phone: 714.528.2301 Fax: 714.528.0128

CUSTOMER	REV.	DRAWING NUMBER	
WESTINGHOUSE	C	MA 22874	Page 1 of 8

EQUIPMENT QUALIFICATION PLAN FOR ENERTECH 8 INCH ANSI CLASS 1707 TYPE ERV-Z N.O. NOZZLE CHECK VALVE

EQUIPMENT QUALIFICATION PLAN

FOR

ENERTECH 8 INCH ANSI CLASS 1707

TYPE ERV-Z

N.O. NOZZLE CHECK VALVE

PREPARED FOR

WESTINGHOUSE ELECTRIC COMPANY, LLC

PURCHASE ORDER 4500322510

ENERTECH PROJECT 960029

Haykaz Mkrtchyan — Prepared by: — 1/15/10 — Date

Avi Shelcoviz — Checked by: — 1/15/10 — Date

Patrick Schaller — Approved by: — 1/15/10 — Date

ORIGINAL

CURTISS WRIGHT Flow Control Company ENERTECH
2950 Birch Street, Brea, CA 92821 U.S.A.
Phone: 714.528.2301 Fax: 714.528.0128

EQUIPMENT QUALIFICATION PLAN FOR ENERTECH 8 INCH ANSI CLASS 1707 TYPE ERV-Z N.O. NOZZLE CHECK VALVE

RECORD OF REVISION

REV LEVEL	ECO NO.	PREPARED BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
A	5-21131	H. Mkrtchyan	8/9/12	P. Schaller	8/9/12	P. Schaller	8/9/12
B	5-21200	H. Mkrtchyan	8/30/12	I. Silverman	8/30/12	A. Torosyan	8/30/12
C	5-21836	Hayk Mkrtchyan	12/11/12	[signature]	12/11/12	[signature]	12/11/12

ORIGINAL

CURTISS WRIGHT Flow Control Company ENERTECH
2950 Birch Street, Brea, CA 92821 U.S.A.
Phone: 714.528.2301 Fax: 714.528.0128

CUSTOMER	REV.	DRAWING NUMBER	
WESTINGHOUSE	0	MAA22989	Page 1 of 8

ADDENDUM TO EQUIPMENT QUALIFICATION PROCEDURE FOR ENERTECH 8"- CLASS 1707 ERV-Z NOZZLE CHECK VALVE

ADDENDUM TO THE EQUIPMENT QUALIFICATION PROCEDURE

FOR

ENERTECH 8"- CLASS 1707

TYPE ERV-Z

NOZZLE CHECK VALVE

PREPARED FOR

WESTINGHOUSE ELECTRIC COMPANY, LLC

PURCHASE ORDER 4500450302

ENERTECH PROJECT 960029

Prepared by: _____ Date 10/26/12

Checked by: _____ Date 26 October 2012

Approved by: _____ Date 26 October 2012

ORIGINAL

CURTISS WRIGHT
Flow Control Company
ENERTECH

Brea, California 92821

QUALITY ASSURANCE PROGRAM

TRAINING RECORD

Written by:	John DeKleine	Date:	11/29/12
Instructor:	Avi Shelcoviz	Title:	Director of Technology

Date/Place/Duration: 12/26/12, Brea Office, 1 Hours

Name (print or type)	Signature	Department/Title
Maykar Markelyan	Maykar M	Sales/Technology
IRA SILVERMAN	[signature]	Sales/Technology
Tom Apelian	T [signature]	Sales/Technology
GNOUNI YENGOIAN	[signature]	Sale/Technology

Lesson Content: (Include document revisions and/or dates, as applicable)

CAR 2033
NRC NON 99901377 2012-201-03
QME-1 Test Plan requirements review
Scheduling Customers for witness activities

CURTISS WRIGHT
Flow Control Company
ENERTECH

Brea, California 92821

QUALITY ASSURANCE PROGRAM

TRAINING RECORD

Written by:	John DeKleine	Date:	11/29/12
Instructor:	Ed Buzby/John DeKleine	Title:	Contracts Manager/Director QA
Date/Place/Duration:	12/27/12 , Brea Office, 1/2 Hours		

Name (print or type)	Signature	Department/Title
DENNIS GELBMANN	D. Gelbmann	QUALITY / QAE
Nareg Mekhitarian		Assoc. QAE
DAVID E WHITTAKER	David E Whittaker	QA/QAE
LORETTA ANAYA	Loretta Anaya	QA/QAE

Lesson Content: (Include document revisions and/or dates, as applicable)

Enertech CAR 2033
NRC NON# 99901377-2012-201—03

Scheduling of Customer witness testing

CURTISS WRIGHT Flow Control Company ENERTECH

CORRECTIVE ACTION REQUEST

ASME ☐ NON-ASME ☐

CAR # 2034 Date Issued: 11/5/12

Originated By: John DeKleine

Internal / External : Internal
Title: Director Quality Assurance

Responsible Department: Design Engineering / Technology

Program/Regulatory Reference: Criterion III, "Design Control," of Appendix B, "Quality Assurance Program Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to Title 10 of the Code of Federal Regulations (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," states, in part, that "measures shall also be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the structures, systems, and components."

Description of Deficiency: Enertech failed to review for suitability of application materials that were essential to the safety-related functions of structures, systems, and components. Specifically, Enertech did not perform the following:
The commercial grade survey performed by Enertech at USU did not verify the calibration quality of the instruments used during the American Society of Mechanical Engineers (ASME) QME-1 functional flow tests to identify and record safety-related test data. These instruments [redacted] which were commercially calibrated and accepted by USU and Enertech without verification of the calibration suppliers.

Recommendations:
1.

Response Due: 11/30/12

This section is to be completed by the referenced Department Manager/Supplier Representative only. *You are hereby requested to investigate the above described condition and identify the cause, the fix, and the corrective action taken to preclude recurrence. Please complete this section of the form, or an attachment addressing the concern, and return by the specified Response Due Date.*

Cause & Extent of Noted Deficiency: Our Technical Evaluation to support the Dedication of Testing Services does not adequately document establishing reasonable assurance the calibration quality characteristic.

Corrective/Remedial Action to Correct the Deficiency: Revise the Technical Evaluation for Testing Services to document how reasonable assurance is established. Further regarding the subject current testing, Enertech confirmed satisfactory accuracy of the M&TE used during USU testing by Enertech post-test accuracy verification. [redacted]

Corrective/Preventative Action to Preclude a Reoccurrence: Revised EOP 8185 to require the Enertech Survey Team when evaluating a commercial grade supplier using calibration controls as an EPRI Method 2 acceptance credit to determine the supplier has appropriate controls when subcontracting calibration, or in-house calibration procedures are implemented that is surveyed and accepted by Enertech Survey Team.

Proposed Completion Date: 12/31/12

Responding Person's Signature/Title: Director Technology Date: 11/30/12

Date CAR Response Received in Enertech QA Department: 11-30-12

QA Evaluation & Approval of Response: Date: 11-30-12

Form 16-1 Rev 0

CURTISS WRIGHT Flow Control Company ENERTECH

CORRECTIVE ACTION REQUEST

2034

Enertech's Verification of Corrective Action Taken:

Method of Verification ☐ Re-Audit ☑ Administrative Review of Objective Evidence

Summary of Verification:

Reviewed revision to EOP 8185, calibration verification ~~record~~ records + training records.

Verification Date:	12-27-12	By:	Fred L Gy	Title:	VP-OPEX

Enertech Management Review for 10CFR Part 21 Applicability: ☐- Applicable; ☑- Not Applicable

Review performed By: Fred L. Gy

Results of Verification:

[X] Satisfactory [ ] Incomplete [ ] Unsatisfactory*

[ ] Remains Open [X] Closed (* Additional Action Required)

Closed Date:	12-27-12	By:	Fred L. Gy	Title:	VP-OPEX

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

CURTISS WRIGHT Flow Control Company
ENERTECH
2950 Birch Street, Brea, CA 92821 U.S.A.
Phone: 714.528.2301 Fax: 714.528.0128

CGS EVALUATION – PERFORMANCE TESTING SERVICES

RECORD OF REVISION

REV. LEVEL	ECO NO.	PREPARED BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
A	5-21687		12/26/2012		12/26/12		12/27/12

The purpose of this document in its current form is to provide Enertech personnel with a reference guideline for writing CGS Dedication Procedures for testing services. This document is intended to enable Enertech to efficiently utilize its capability in conducting the CGS dedication procedure.

ORIGINAL

CURTISS WRIGHT Flow Control Company
ENERTECH
2950 Birch Street, Brea, CA 92821 U.S.A.
Phone: 714.528.2301 Fax: 714.528.0128

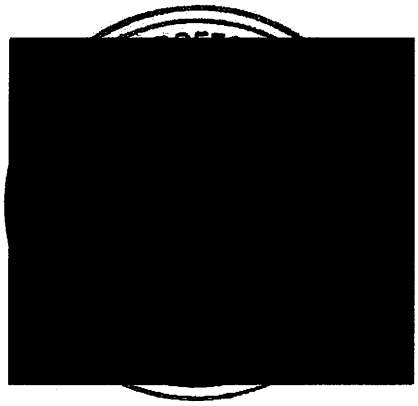
TO: Enertech Engineering **FROM:** [redacted]

SUBJECT: Calibration Verification **DATE: 12/27/12**

In an effort to ensure that test results obtained from Utah Water Research Lab (UTWRL) are acceptable for Enertech's normally open nozzle check valve performance verification under the simulated flow conditions, Enertech has performed verification of calibration on the following test instruments:

1. Fluke Digital Multimeter (FMD) Model 87, ID: 2105 XMTR
2. Fluke Digital Multimeter (FMD) Model 87, ID: 3039 XMTR
3. Rosemount Pressure Transmitter Model 3051S1CD3AE12A1AB4M5Q4, S/N: 0312105
4. Rosemount Pressure Transmitter Model 3051S1CD3AE12A1AB4M5Q4, S/N: 0353039

Enertech engineering has reviewed the Inspection and Verification reports of these instruments, more specifically, the maximum full scale errors in the measurements, and found them to be acceptable based on the measured values and customer specified flow performance requirements.



INSPECTION & VERIFICATION REPORT, REV. 0

[redacted]

DATE: 10/16/2012

RECEIVE / INSPECTION:

[redacted] The FDM looked to be in good condition and no shipping damage was noted.

SCOPE OF WORK:

The FDM was received to verify the displayed signal values/readings of the FDM under Enertech's Quality Assurance program.

VERIFICATION:

[redacted]

CONCLUSION:

The result of the verification showed that the FDM passed successfully by being within the specified/published manufacturer tolerances of the full-scale reading.

Marius Rosca
Calibration Technician

10/16/2012
Date

CURTISS WRIGHT
Flow Control Company
ENERTECH

INSPECTION & VERIFICATION REPORT, REV. 0

[redacted]

DATE: 10/16/2012

RECEIVE / INSPECTION:

[redacted] The FDM looked to be in good condition and no shipping damage was noted.

SCOPE OF WORK:

The FDM was received to verify the displayed signal values/readings of the FDM under Enertech's Quality Assurance program.

VERIFICATION:

[redacted]

CONCLUSION:

The result of the verification showed that the FDM passed successfully by being within the specified/published manufacturer tolerances of the full-scale reading.

Marius Rosca
Calibration Technician

10/16/2012
Date

CURTISS WRIGHT
Flow Control Company
ENERTECH

INSPECTION & VERIFICATION REPORT, REV. 0

[redacted]

DATE: 10/16/2012

RECEIVE / INSPECTION:

[redacted] The RPT looked to be in good condition and no shipping damage was noted.

SCOPE OF WORK:

The RPT was received to verify the pressure values/readings of the RPT under Enertech's Quality Assurance program.

VERIFICATION:

[redacted]

CONCLUSION:

The result of the verification showed that the RPT was showing a maximum instrument full-scale error of 0.00%. For further detail in regard to the test result, reference the test results data sheet.

Enertech's QA Manual requires that any instrument used as a standard for testing should be four (4) times more accurate than the instrument under test (four to one accuracy ratio). With the instrument standard used for this test, Enertech is able to certify the RPT to a 0.25% full-scale error.

Marius Rosca
Calibration Technician

10/16/2012
Date

INSPECTION & VERIFICATION REPORT, REV. 0

[redacted]

DATE: 10/16/2012

RECEIVE / INSPECTION:

[redacted] The RPT looked to be in good condition and no shipping damage was noted.

SCOPE OF WORK:

The RPT was received to verify the pressure values/readings of the RPT under Enertech's Quality Assurance (QA) program.

VERIFICATION:

[redacted]

CONCLUSION:

The result of the verification showed that the RPT was showing a maximum instrument full-scale error of 0.92%. For further detail in regard to the test result, reference the test results data sheet.

Enertech's QA Manual requires that any instrument used as a standard for testing should be four (4) times more accurate than the instrument under test (four to one accuracy ratio). With the instrument standard used for this test, Enertech is able to certify the RPT to a 1.00% full-scale error.

Marius Rosca
Calibration Technician

10/16/2012
Date

CURTISS WRIGHT
Flow Control Company
ENERTECH

Brea, California 92821

QUALITY ASSURANCE PROGRAM

TRAINING RECORD

Written by:	John DeKleine	Date:	12-19-12
Instructor:	John DeKleine	Title:	Director, Quality Assurance
Date/Place/Duration:	12-19-12 , Brea Office, 1/2 Hours		

Name (print or type)	Signature	Department/Title
Ararat Torosyan		Operations / Dir of OP's
John Salazsky		Lead Auditor
Manali Shah		QA / QAE - Lead Auditor
DAVID E. WHITAKER		QA/QAE LEAD AUDITOR
IRA SILVERMAN		Sr. Principal Engr. Lead Auditor
Avi Sheleon		Sale / Dir Techology
John DeKleine		QA/Director - Corp Auditor
LORETTA ANAYA		QA/QAE, Lead Auditor

Lesson Content: (Include document revisions and/or dates, as applicable)

Corrective Action Request 2034, including
EOP 8185, updated CGD Survey Checklist
NRC Inspection Report 99901377 2012-201 NON -02

CURTISS WRIGHT
Flow Control Company
ENERTECH

ENERTECH Operating Procedure

EOP 8185	REV I	PAGE 1 OF 7

Title PROCEDURE FOR COMMERCIAL GRADE SURVEY

Prepared By *John DeKleine* Date May 26, 2005

Approved By *Herbert Ellsworth* Date May 27, 2005

QA Approval *John DeKleine* Date May 27, 2005

RECORD OF REVISIONS

REV	DESCRIPTION	BY	DATE	APP'D	DATE	QA	DATE
Ø	Please refer to original cover sheet in archives for signatures and record of revisions.						
A							
B							
C							
D							
E							
F							
G							
H							
I	Added new par: 7.3.1.7.5. Revised par.: 7.4.3		11/15/12		11/15/12		11/15/12