

SUBJECT

Quality Assurance Manual

CAGE CODE

64818

DATE OF ORIGIN

06-07-84

SECTION

-

PAGE

i

CURRENT REVISION

H

QUALITY MANUAL

PREPARED BY:

Ron E. Ogle 9/30/05

Ron E. Ogle
Quality Assurance Manager

APPROVED BY:

Dan M. McQueen

Dan M. McQueen
President

SUBJECT

Quality Assurance Manual

CAGE CODE

64818

DATE OF ORIGIN

06-07-84

SECTION

-


PAGE

iiCURRENT
REVISION**H**COMMITMENT to QUALITY

FLUID COMPONENTS INTERNATIONAL LLC will hire experienced personnel, continually train them, and clearly define their responsibilities in order to provide the highest level of quality products and services to the wide variety of markets and industries that we support. All employees will be responsible for quality and are expected to participate in continuous quality improvement functions so that industry standards will be met or exceeded. Employees will also be expected to take initiative in continuously improving processes and in their own self-development skills. Employees will be provided the tools, instructions, and authority to act in the best interest of the company with regard to the quality of our products and or service. The Quality Assurance and Quality Control organizations will function as a catalyst to establish informational quality needs, compliance standards, mutual improvement targets, process changes, and overall quality focus. These organizations will demonstrate continuous communications and collaboration with all operational departments.

The Quality Assurance organization is chartered with defining and enforcing the standards that are specific to the various industries that we service. Quality Assurance shall either integrate or isolate those requirements so that we efficiently meet all industry specific quality expectations.

The Quality Manual that follows shall be used as an internal baseline for quality processes. The Manual will serve as a standard for which we will compare our performance. The Manual will be a living document and will be regularly updated with improvements and changes that are necessary to meet the evolving business environment. The Manual will additionally reflect our commitment of quality to our customer base and will be readily available for review and recommendations.



Dan McQueen,
President

SUBJECT	CAGE CODE	DATE OF ORIGIN	SECTION	PAGE	CURRENT REVISION
Quality Assurance Manual	64818	06-07-84	-	iv	H

REVISION PAGE

PAGE	REV	DESCRIPTION	APPROVALS		
			DATE	QA	CO.MGMT.
	H	8003	6-07-84	SM	MMQ RD
	J	8003	5-18-87	SM	MMQ RD
	K	8003	1-10-91	SM	MMQ RD
N/A	A	COMPLETELY REVISED from QA Manual 8003 Rev. K. Changed to new numbering system. Initial release at new number is Rev. A	7-1-97	SM	DMQ DMF
	B	Revised to incorporate process changes required as a result of installing a new business system	2-03-98	SM	DMQ DF
	C	Completely revised to incorporate AS9100 and ISO9001 requirements. Made changes to what is now "Section Three", (previous "Control Manual in its entirety).	8-24-00	REO	DMQ REO
2 of Section 2	D	Added the second paragraph in "1.0 Scope"	10-9-00	REO	DMQ REO
All, (four places)		Changed "AS9100" to include "AS9000", i.e., "AS9000/AS9100".			
28 of Section 2		Added "customers and" (regulatory authorities ...) to the last sentence in 4.16.			
All v	E	Renumbered pages as necessary	7-31-02	REO	DMQ REO
viii		Added (customer and Field Services)			
ix		Added and corrected "NQA-1" references			
x		Updated Org Chart			
2		Reformatted, deleted 04QA704027, added several procedures.			
17 of Section 1		Added second paragraph to 1.0			
12 of Section 3		Added "Notification" paragraph to 4.14.3			
14 of Section 3		Changed the reference from 04QA704027 to 01DM000064 in paragraphs 5.3 & 5.4			
16 of Section 3		Deleted sentence pertaining to superscript on Op -Sheet and changed reference from 04QA704027 to 01DM000064 in paragraph 5.9.			
17 of Section 3		Added sentence pertaining to ASME Certificate to paragraph 7.1.1			
		Added reference to Quality Assurance Procedure 04QA704032 to paragraph 7.3			
	F	Completely revised	8-19-03	REO	DMQ REO

SUBJECT	CAGE CODE	DATE OF ORIGIN	SECTION	PAGE	CURRENT REVISION
Quality Assurance Manual	64818	06-07-84	-	v	H

PAGE	REV	DESCRIPTION	APPROVALS		
			DATE	QA	CO.MGMT.
vi, x, xi, section 2 pages 2, 10, 15, 16, 20, 22, & 23	G	Made references to 8100.7 in Appendix B and where applicable in Section 2 of the manual per FAA request.	11-12-03	REO	DMQ REO
ii	H	Updated company's name	09-30-05	REO	DMQ REO
vi		Added " Industrial " to Controlled projects paragraph			
ix		Change "ATEX" to "EX" in Appendix A			
x		Deleted QAP 04QA704025, procedure was inactivated. Corrected procedure # "07QA04044" to "04QA704044" Corrected procedure # "04QA404062" to "04QA704062" Renumbered index			
xi		Corrected manual # "007QA070003" to "07QA070003" Deleted "20" from the 8100.7 reference column for procedure 04QA704091. (No such paragraph exists) Renumbered index Updated company's name			
xii		Updated procedure number reference to correlate to renumbering of index on pages xi and xii Added note to explain the number references			
Sect 1;2		Revised the end of the first paragraph in 1.0 – Scope from "quality system as it relates to all projects not identified as Controlled" to "minimum quality system requirements"			
Sect 1;2		Included reference to "Ex" representative in paragraph 1.0 – Scope			
Sect 1; 18 & 19		Included reference to "Ex" representative and 10 year record retention requirement in 8.3 – Notification			
Sect 3;2		Included the "B" in "Appendix B" in paragraph 1.1 Corrected "Appendix B of the manual" to Appendix D of the manual" in paragraph 1.1 Corrected "Appendix B of the manual" to "Appendix A of the manual" in paragraph 1.1			
Sect 3;2		Updated company's name in paragraphs 1.1, 2.1 and 2.2			
Sect 3;3		Updated company's name in paragraph 2.2			
Sect 3; 4		Updated company's name in paragraphs 2.6 and 3.1			
Sect 3;5		Updated company's name in paragraph 3.5			
Sect 3;6		Updated company's name in paragraph 4.1			
Sect 3;12	Updated company's name in paragraph 5.1				
Sect 3;14	Updated company's name in paragraph 9.1				
Sect 3;21	Updated company's name in paragraph 18.3				

SUBJECT	CAGE CODE	DATE OF ORIGIN	SECTION	PAGE	CURRENT REVISION
Quality Assurance Manual	64818	06-07-84	-	vi	H

Quality Management System

FCI manufactures Flow, Liquid Level, Temperature Instrumentation, and Flow Conditioners.

This Quality Manual provides an overview of FCI's quality system and identifies the processes used to ensure that our products and servicing (customer and Field Services) meet specified requirements. The processes described in this Manual are aimed at achieving customer satisfaction by preventing nonconformities at all stages of design, product realization, service, and delivery.

FCI has developed and implemented a quality management system, based on the ISO 9001:2000 and AS9100 Rev A standards, 8100.7 – Appendix B - Revision B, the Quality System Requirements of 10CFR50 Appendix B, ANSI N45.2-1977, MIL-I-45208A, 14CFR21.303h and the basic Quality System Requirements of ANSI NQA-1-2000 to support our quality policy. This Manual defines the quality management system. Procedures and work instructions provide additional detail. Procedures address the “what, when and where” and include responsibilities, objectives, and activities for each applicable function in the company. Work instructions provide step-by-step details on performing specific tasks, and include criteria for determining compliance.

Customer specific requirements, which are not addressed by the current quality system, are considered on an individual project/contract/order basis, and communicated throughout FCI as required.

The Quality Management system at FCI has been developed to accommodate three levels of quality management. The level of quality management to be applied to a specific project/contract/order is set at Contract Review and is suitably identified thereafter. The three levels are defined as follows:

Industrial “Controlled” Projects: These projects include (but are not limited to) Nuclear Safety. These types of projects/contracts/orders adhere to all the requirements of ISO 9001:2000 as defined in Section One of this manual, the Quality System Requirements of 10CFR50 Appendix B, ANSI N45.2-1977, and the basic Quality System Requirements of ANSI NQA-1-2000 as defined in Section Three of this manual. These projects/contracts/orders and all associated data and documentation have the unique identification of “Controlled”.

Aerospace Projects: These projects include all Aerospace identified projects. These types of projects/contracts/orders adhere to all the requirements of ISO 9001:2000, AS9100, revision A, and the Quality System Requirements of MIL-I-45208A and 14CFR21.303h (8100.7 – Appendix B - Revision B) as defined in Section Two of this manual. These

SUBJECT

Quality Assurance Manual

CAGE CODE

64818

DATE OF ORIGIN

06-07-84

SECTION

-

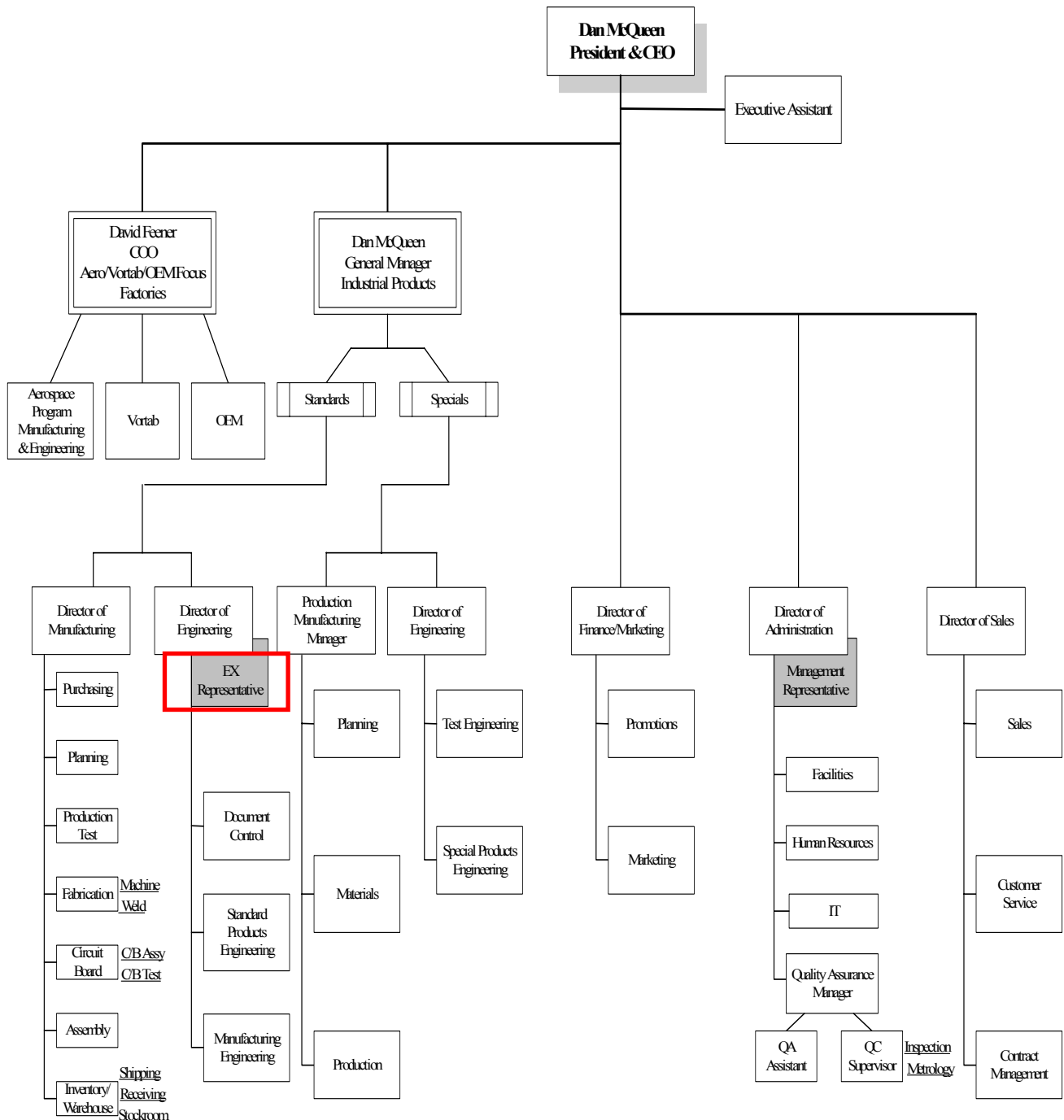
PAGE

ix

CURRENT REVISION

H

Appendix A: Company Organization Chart



SUBJECT	CAGE CODE	DATE OF ORIGIN	SECTION	PAGE	CURRENT REVISION
Quality Assurance Manual	64818	06-07-84	-	x	H

Appendix B: Interrelation of Quality System and ISO 9001/AS9100; 8100.7; and NQA-1-2000.

#	LEVEL 2 DOCUMENTS	MANUAL SECTION				
		2 (Per 8100.7)	1 & 2 (Per ISO/AS)		3	
1	01DM000010, Design and Development Changes / ECO		7.3	7.0	3.5	3
2	01DM0000064/01DM000025, Engineering Document Control	202 *425 *612	4.2.3	4.0	6	6
3	04QA704001, Receiving Inspection	413	7.4	7.0	8.1, 10	8 & 10
4	04QA704002, Order Entry Procedure	102	7.2	7.0	3.1	3
5	04QA704003, Purchasing Information		7.4	7.0	4	4
6	04QA704004, Control of Nonconforming Product	530	8.3	8.0	15	15
7	04QA704005, Contract Review		7.2.2	7.0	3.1	3
8	04QA704006, Calibration Program		7.6	7.0	12.1	12
9	04QA704007, Quality System Document Control	202	4.2.3	4.0	6.2	6
10	04QA704008, Audits		8.2.2	8.0	18.1, 18.2	18
11	04QA704010, Special Packaging		--	--	13.3.1	13
12	04QA704011, 10CFR Reporting		8.3	8.0	15.3	15
13	04QA704013, Control of Quality Records	108	4.2.4	4.0	17	17
14	04QA704018, Standard Packaging		7.5.5	7.0	13.3	13
15	04QA704019, Final Cleaning		7.5.5	7.0	13.2	13
16	04QA704020, Process Control Procedure: Controlled		7.5	7.0	5.2	5
17	04QA704024, Issuing Stamps		7.5.3	7.0	14.3	14
18	04QA704026, In-Process Inspection		8.2.4	8.0	8.1, 10.1	8 & 10
19	04QA704029, Evaluation of Measuring and Test Equipment		7.6	7.0	12.3	12
20	04QA704032, Testing Wetted Surfaces		7.4.3	7.0	7.3	7
21	04QA704034, Competence, Awareness, and Training	431	6.2.2	6.0	2.6	2
22	04QA704038, Final Inspection	428 409	8.2.4	8.0	8.1, 10.1	8 & 10
23	04QA704039, Welder Qualification		7.5.2	7.0	9.2	9
24	04QA704044, Vendor Surveys		7.4.1	7.4	7.1	7
25	04QA704046, Vendor Performance Record Reviews		7.4.1	7.4	7.1.2	7
26	04QA704048, Foreign Object Prevention		7.5.1, 7.5.5	7.0	--	--
27	04QA704049, First Article		8.2.4.2	8.0	--	--
28	04QA704050, Controlled Repair		7.5.1	7.0	10	10
29	04QA704052, Project Notebooks		4.2.4	4.0	17	17
30	04QA704053, Dated Coded Materials	415 416	7.5.5	7.0	7.4 & 8.1	7 & 8
31	04QA704054, Auditor Qualification		8.2.2	8.0	18.4	18
32	04QA704055, Customer Property		7.5.4	7.0	7.6	7
33	04QA704057, Workmanship Standard		7.5.2	7.0	9.2	9
34	04QA704058, Plastic Coated Sensor Head Testing		4.9	4.0	--	--
35	04QA704062, Management Review		5.6	5.0	2.2	1
36	04QA704063, Inspection History		8.1	8.0	--	--
37	04QA704064, Hardness Testing		7.4.3	7.0	7.3	7
38	04QA704067, Mil/Aero Serial Numbers		7.5.3	7.0	--	--
39	04QA704070, Vendor Corrective Action		8.5.2 &	8.0	16.1	16

deleted
04QA704025

SUBJECT	CAGE CODE	DATE OF ORIGIN	SECTION	PAGE	CURRENT REVISION
Quality Assurance Manual	64818	06-07-84	-	xi	H

			8.5.3			
40	04QA704071, Commercial Grade Item Testing		--	--	7.5	7
41	04QA704074, Aerospace Return Product Procedure	701 702 703 704 705 707	7.5.1	7.0	--	--
42	04QA704075, Reporting to the FAA	110	8.3	8.0	--	--
43	04QA704076, On Time Delivery		8.1	8.0	--	--
44	04QA704077, Evaluation of Subcontractors		7.4.1	7.0	7.1	7
45	04QA704078, Back-up Procedure		4.2.4	4.0	17	17
46	04QA704079, Field Service/Installation Procedure		7.5.1	7.0	--	--
47	04QA704080, Repair Service Procedure		7.5.1	7.0	--	--
48	04QA704081, Storage		7.5.5	7.0	13.1	
49	04QA704082, Production and Service Provision / Process Control Procedure: Non-controlled Jobs		7.5.1	7.0	--	--
50	04QA704083, Corrective and Preventive Action		8.5.2, 8.5.3	8.0	16	16
51	04QA704084, Tooling Procedure		7.5.1.3	7.0	--	--
52	04QA704085, Product ID		7.5.3	7.0	--	--
53	04QA704086, Preventive maintenance of Process Equipment		6.3	6.0	--	--
54	04QA704088, Validation of Processes for Production and Service Provision / Special Process Procedure		7.5.2	7.0	9.1	9
55	04QA704089, Statistical Techniques		8.1	8.0	--	--
56	04QA704091, Design and/or Development		7.3	7.0	3	3
57	04QA704092, Return Authorization		8.1	8.0	--	--
58	04QA704093, Customer Response		8.5.3	8.0	16	16
59	04QA704094, Signature Authorization		7.4	7.0	4	4
60	04QA704097, Preventive maintenance of the Building		6.3	6.0	--	--
61	04QA704098, Customer Satisfaction		8.2.1	8.0	--	--
62	07QA070003, Quality Manual		4.2.2	4.0	1	1
63	06QA020013, Qualification Verification Analysis		--		3.4	3
64	06QA020014, Nuclear Item Dedication Plan		--		7.5	7

**Paragraph 425 & 612 are met by the procedures referenced, no cross-reference to the manual paragraphs. Paragraph 612 is also met by manual paragraph 7.4.*

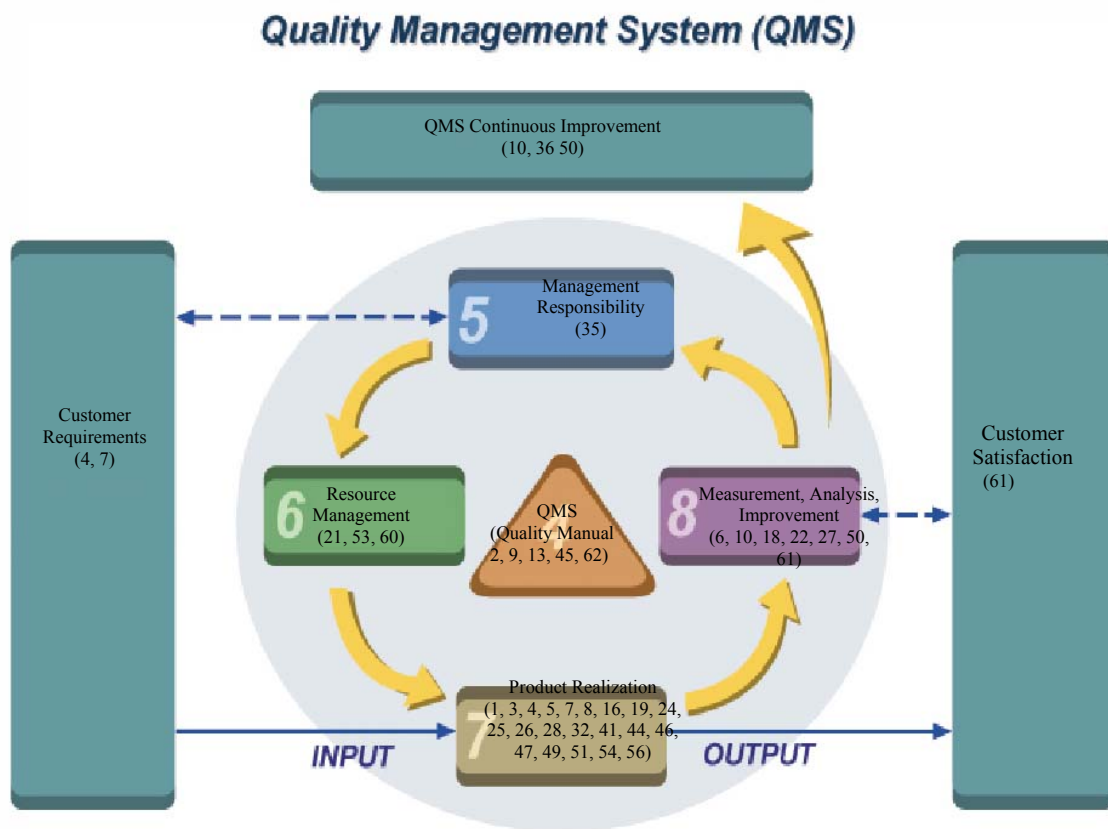
NOTE: All "04QA" number sequences listed in this manual reflect Fluid Components International LLC's current numbering system. The core number of the document is 704XXX, which remains the same regardless of the prefix added. Some of the Quality Assurance Procedures listed in this manual have NOT been revised since the implementation of the 04QA system; therefore this note serves as notice that the document with the core number 704XXX, regardless of the prefix represents the same document.

SUBJECT	CAGE CODE	DATE OF ORIGIN	SECTION	PAGE	CURRENT REVISION
Quality Assurance Manual	64818	06-07-84	-	xii	H

Appendix C: *Interrelationships Diagram*

A description of the interaction between the processes of the quality management system:

(NOTE: The numbers referenced below refer to the index number in Appendix B above.)



SUBJECT

Quality Assurance Manual

CAGE CODE

64818

DATE OF ORIGIN

06-07-84

SECTION

1

PAGE

2CURRENT
REVISION**H**

1.0 SCOPE

The requirements described in this section, Section One, of the Quality Manual provide an overview of FCI's **minimum quality system requirements.**

Issuance and changes to the manual shall be performed in accordance with "Document and Data Control, paragraph 4.2.3 of this section of the manual. Changes to this Manual that substantially effect the Quality System e.g. Change of Quality Assurance Manger or **EX Representative (ATEX, IECEX, etc.),** Certifications i.e. ISO, etc., shall be submitted to a Notified Body **(ATEX, IECEX,** etc.) by the appropriate Representative **(EX** Representative, Management Representative, Quality Assurance Manager, etc.) if required by the standard.

2.0 REFERENCED DOCUMENTS

This manual is supplemented by numerous procedures as identified in Appendix "B" and referenced throughout this manual. Procedures other than those referenced may also be used to implement the Quality Management system.

3.0 REFERENCES

ISO 9001:2000, Quality management systems - Requirements

4.0 QUALITY MANAGEMENT SYSTEM

4.1 GENERAL

FCI has established, documented, implemented, and maintains and continually improves a quality management system in accordance with the requirements of ISO 9001:2000.

To implement the quality management system FCI will:

- a) Identify the processes needed for the quality management system and their application throughout the organization,
- b) Determine the sequence and interaction of these processes,
- c) Determine criteria and methods needed to ensure that both the operation and control of these processes are effective,
- d) Ensure the availability of resources and information necessary to support the operation and monitoring of these processes,
- e) Measure, monitor and analyze these processes, and

SUBJECT	CAGE CODE	DATE OF ORIGIN	SECTION	PAGE	CURRENT REVISION
Quality Assurance Manual	64818	06-07-84	1	18	H

8.2.4 MEASUREMENT AND MONITORING OF PRODUCT

FCI measures and monitors the characteristics of the product to verify that product requirements have been met. This is carried out at appropriate stages of the product realization process in accordance with planned arrangements.

Evidence of conformity with the acceptance criteria is maintained. Records indicate the person(s) authorizing release of product.

Product release and service delivery do not proceed until all the planned arrangements have been satisfactorily completed, unless otherwise approved by a relevant authority and, where applicable, by the customer.

8.3 CONTROL OF NONCONFORMING PRODUCT

FCI ensures that product which does not conform to requirements is identified and controlled to prevent unintended use or delivery. The controls and related responsibilities and authorities for dealing with nonconforming product are defined in a documented procedure.

FCI deals with nonconforming product by one or more of the following ways:

- a) By taking action to eliminate the detected nonconformity,
- b) By authorizing its use, release or acceptance under concession by a relevant authority and, where applicable, by the customer,
- c) By taking action to preclude its original intended use or application.

Records of the nature of nonconformities and any subsequent actions taken, including concessions obtained, are maintained.

When nonconforming product is corrected it is subject to re-verification to demonstrate conformity to the requirements.

When nonconforming product is detected after delivery or use has started, FCI will take action appropriate to the effects, or potential effects, of the nonconformity.

NOTIFICATION (prEN 13980:2002 and IECEx/OD005, Version 2; 8.3) ((DQS100)

FCI shall take action appropriate to the degree of risk, where non-conforming product has been supplied to a customer.

- FCI's Contract Manager, Quality Assurance Manager, or designation representative (i.e., EX Representative – "ATEX", "IECEX" etc.) will notify

SUBJECT	CAGE CODE	DATE OF ORIGIN	SECTION	PAGE	CURRENT REVISION
Quality Assurance Manual	64818	06-07-84	1	19	H

the customer or Notified Body within the time frame required per contract or in a timely manner if no contractual requirements are set forth.

- FCI shall, in writing, inform our customer and/or Notified Body responsible for the quality system notification.

FCI shall maintain records of the above notification for ten years.

8.4 ANALYSIS OF DATA

FCI determines, collects, and analyzes appropriate data to demonstrate the suitability and effectiveness of the quality management system and to evaluate where continual improvements of the quality management system can be made. This includes data generated by measuring and monitoring activities and other relevant sources.

FCI analyses this data to provide information on:

- a) Customer satisfaction,
- b) Conformity to product requirements,
- c) Characteristics and trends of processes and product including opportunities for preventive action, and
- d) Suppliers.

8.5 IMPROVEMENT

8.5.1 CONTINUAL IMPROVEMENT

FCI continually improves the effectiveness of the quality management system through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive action, and management review.

8.5.2 CORRECTIVE ACTION

FCI takes corrective action to eliminate the cause of nonconformities in order to prevent recurrence. Corrective action is appropriate to the effects of the nonconformities encountered.

The documented procedure for corrective action is established to define requirements for:

- a) Reviewing nonconformities (including customer complaints),

SUBJECT

Quality Assurance Manual

CAGE CODE

64818

DATE OF ORIGIN

07/31/02

SECTION

3

PAGE

2CURRENT
REVISION**H**

1 ORGANIZATION

1.1 SCOPE

This section, Section Three, of the manual sets forth the Quality Assurance Program and the methods used to achieve implementation and documentation of the “Controlled” program. This program complies with the Requirements of ISO 9001:2000; the Quality System requirements of 10CFR50 Appendix **B**; and the basic Quality System Requirements of ANSI NQA-1-2000.

This Manual, *in its entirety*, unless identified otherwise, shall be issued as a controlled document to **Fluid Components International LLC’s** customers having contractual obligation to this section of the manual.

Appendix **D** to this manual lists job descriptions to show the activities that affect quality and how they interface with the Quality Assurance Program. For their relationship to the Organization, see Appendix **A**, Company Organization Chart.

2 QUALITY ASSURANCE PROGRAM

2.1 REFERENCED DOCUMENTS

Fluid Components International LLC’s Quality Assurance Manual 07QA070003 is supplemented by numerous implementing procedures and are listed in Appendix B and referenced throughout this section of the manual. Procedures other than those referenced in this section may also be used to implement the Quality Assurance Program. When determined necessary, any of the procedures listed may be deleted from the program; however, the Quality Assurance Manager shall ensure that if a procedure is deleted the requirements stated in this manual are not compromised.

2.1.1 ENGINEERING PROCEDURES

01DM000064/01DM000025 Engineering Document Control

2.2 REVIEW AND APPROVAL BY MANAGEMENT

A review of this manual shall be performed every calendar year at the direction of the Quality Assurance Manager. The purpose of this review is to determine the adequacy of the Quality Assurance Program in meeting Quality System Requirements outlined in the “Scope” in this section of this manual. The review shall also consider other codes or regulations as they apply to **Fluid Components International LLC**. The Internal Audit Team shall typically accomplish this review during the annual internal

SUBJECT

Quality Assurance Manual

CAGE CODE

64818

DATE OF ORIGIN

07/31/02

SECTION

3

PAGE

3CURRENT
REVISION**H**

audit. Additional reviews may be performed when determined necessary by the Quality Assurance Manager. Reviews of the Quality Assurance Manual shall be documented. Changes found during the review that are necessary to improve the clarity or effectiveness of the Quality Assurance Program shall be incorporated.

Both the President and Chief Operations Officer of Fluid Components International LLC approved revisions "A" and "B" of this Quality Assurance Manual. Due to changes in the organization, the President hereinafter shall approve changes or revisions to the manual.

2.3 QUALITY ASSURANCE PROGRAM IMPLEMENTATION

Organizations participating in the Quality Assurance Program shall be reviewed on a yearly basis. This review shall substantiate the effectiveness of implementation of the portion of the program for which each organization has responsibility. This review shall be accomplished during the internal audit of the Quality Assurance Program.

2.4 QUALITY PLANS

In some instances there are customers with unique contractual quality requirements that are not specifically addressed in this manual or the supporting Quality Assurance Procedures. Some of these requirements may even come in conflict with stated policies in this Manual. To ensure unique contractual requirements relating to quality are incorporated, Quality Plans may be used to document and accomplish these requirements.

Quality Plans will state when and for whom they are applicable. They will also state that Quality Assurance Manual 07QA070003 will be used as a basis for the quality system. All additional or conflicting requirements will be addressed. Quality Plans shall take precedence over the Quality Assurance Manual. Quality Plans shall be generated by the Quality Assurance Manager and submitted to the customer for approval prior to implementation.

2.5 INDOCTRINATION AND TRAINING

To the degree necessary, as determined by the Quality Assurance Manager, personnel performing quality functions and activities affecting quality shall be properly trained and indoctrinated in their respective areas of responsibility. Learning tools, such as on-the-job training, seminars, classes, testing, and the like, shall be used to accomplish these tasks. The documentation of indoctrination and training of Quality

SUBJECT

Quality Assurance Manual

CAGE CODE

64818

DATE OF ORIGIN

07/31/02

SECTION

3

PAGE

4CURRENT
REVISION**H**

personnel and other personnel performing activities affecting quality shall be in accordance with Quality Assurance Procedure 04QA704034.

2.6 QUALIFICATION OF PERSONNEL PERFORMING VERIFICATION AND AUDITING ACTIVITIES

Personnel performing verification and auditing activities shall have the experience and training commensurate with the activity being performed. The capabilities of personnel performing these activities shall be determined initially by a review of their education, experience, training, and either test results or capability demonstration. Performance shall be re-evaluated periodically to assure continued satisfactory performance. Qualification requirements are more thoroughly described in Quality Assurance Procedure 04QA704034 for verification personnel and 04QA704054 for Auditing personnel.

NOTE: Fluid Components International LLC does not employ Nondestructive Examination personnel; this is considered a "Special Process" and is covered in paragraph 10 of this manual.

3 DESIGN CONTROL

3.1 CONTRACT REVIEW

Upon receipt of all new Customer Contracts, the customer's Purchase Order and accompanying documents (i.e., specifications and drawings) shall be assigned to a Contract Manager. The Contract Manager, Quality Assurance Manager and when necessary an assigned Engineer, shall perform a Contract Review. At the option of the Contract Manager, other personnel from disciplines such as Qualification Engineering, Design Engineering, Production, and Purchasing may participate in this review. This review identifies design, regulatory and specification requirements, suitable materials and processes, and applicable codes and standards that shall be incorporated into Fluid Components International LLC drawings, procedures, and instructions. The review shall also include assignments for contract related design tasks. The review and assignments shall be documented on Contract Review forms described in Quality Assurance Procedure 04QA704005.

3.2 DESIGN DOCUMENT REVIEW

Documents created to support a customer contract such as Outline Drawings, Acceptance Test Procedures, etc. shall be reviewed by Contracts, Engineering, and Quality Assurance at a minimum to assure contractual requirements have been

SUBJECT**Quality Assurance Manual****CAGE CODE****64818****DATE OF ORIGIN****07/31/02****SECTION****3****PAGE****5****CURRENT
REVISION****H**

incorporated. Additional parties may participate in the review of these documents when specifically requested by the Contract Manager.

3.3 NEW DESIGNS

New product requiring qualification to specific requirements shall have a Qualification Test Procedure developed to accomplish the testing. When required this document shall be submitted to the customer for approval.

The results of completed qualification testing shall be documented in the Qualification Test Report.

3.4 QUALIFICATION DESIGN VERIFICATION

Design applications based on previously qualified designs and requiring traceability to an existing qualification test report shall be reviewed against the original design to ascertain any possible design changes or deviations made necessary by the customer's application and/or qualification envelope. Written documentation of the verification shall be required for all domestic Nuclear customers, and if imposed by the customer, for all other industries and regions.

This design verification and analysis shall be performed by qualified personnel not responsible for initiating the original design for all Nuclear applications. The same individual for all other industries can perform design verification and analysis.

This verification shall incorporate as appropriate, suitable testing programs, alternate or simplified calculations, design reviews, similarity analysis, or other approved methods. The verification shall be documented in accordance with Quality Assurance Procedure 06QA020013, Qualification Verification Analysis".

3.5 DESIGN CHANGES

Changes to or deviations from existing engineering design documents (i.e., revisions, temporary "Deviations" and "Use As Is" or "Repair" dispositions of nonconforming items) shall be properly documented and controlled. Design changes or deviations to engineering documents shall be reviewed, approved, and recorded in accordance with Engineering Procedure 01DM000064/01DM000025 and the nonconforming material procedure 04QA704004.

Any of the above-described design changes that affect the customer's specifications or **Fluid Components International LLC** documents approved by the Customer shall

SUBJECT	CAGE CODE	DATE OF ORIGIN	SECTION	PAGE	CURRENT REVISION
Quality Assurance Manual	64818	07/31/02	3	6	H

require customer participation in the formal approval cycle. Customer approval shall be documented.

4 PROCUREMENT DOCUMENT CONTROL

4.1 **FLUID COMPONENTS INTERNATIONAL LLC** PURCHASE ORDER REVIEW

Quality Assurance shall review all Purchase Orders containing controlled items for incorporation of all applicable quality requirements and request for certification. When applicable, the Purchase Order shall require vendors to impose the Quality Assurance and contractual requirements of FCI's customers' Purchase Orders on sub-tier suppliers. The Purchase Orders shall identify and be reviewed for inclusion of applicable attachments such as controlled Drawings, and Certified Shippers. As appropriate, provisions for compliance to contract and federal regulations shall be included. When appropriate, provisions shall be included for access to the vendor's plant to perform audits, surveys, or source inspection. After review and approval, an authorized Quality Assurance Representative shall sign each Purchase Order. The signing of the Purchase Order by Quality Assurance acts as the official issuance of the contract.

4.2 PURCHASE ORDER PROCEDURE

For detailed instructions on completing, reviewing, correcting, or changing Controlled Purchase Orders and related documents, see Quality Assurance Procedure 04QA704003.

5 INSTRUCTIONS, PROCEDURES, AND DRAWINGS

Activities affecting quality shall be prescribed by and performed in accordance with documented instructions, procedures, or drawings of a type appropriate to the circumstances. The documents describes in this section of the manual shall provide the means by which these activities are accomplished. The purpose for these documents is to supply Inspectors, Production and Test personnel, and vendors with adequate information to satisfactorily perform their respective activities and functions affecting quality.

5.1 CUSTOMER ORDERS AND ORDER VERIFICATION PACKAGES

All contracts subject to the requirements of this manual shall be processed in accordance with Quality Assurance Procedure 07QA704002.

SUBJECT	CAGE CODE	DATE OF ORIGIN	SECTION	PAGE	CURRENT REVISION
Quality Assurance Manual	64818	07/31/02	3	12	H

checklist, 05QA000104, shall be used as a guideline to assure that all required information is listed on the Certificate.

A "Certified Shipper" shall accompany parts sent by **Fluid Components International LLC** to vendors for fabrication or processing. The Certified Shipper contains information important to maintain traceability of the item(s). The vendor's signature is required on the Certified Shipper to certify that they had complied with the Purchase Order and drawing and that the items have been kept segregated without mixing batches of parts. See Quality Assurance Procedure 04QA704003 for directions in completing and processing the Certified Shipper.

7.4 AGE SENSITIVE MATERIALS

All age sensitive materials as defined in Quality Assurance Table 08QA080000, are required to be purchased with the date of manufacture and/or an expiration date. If codes are used for either date, an interpretation of the code must be provided. Rotation practices, date code extensions, and internal shelf life policies are documented in Quality Assurance Procedure 04QA704053.

7.5 COMMERCIAL GRADE ITEM (CGI) DEDICATION

Special consideration must be addressed for Commercial Grade Items intended for use in Safety-Related, Class 1E product. These include how the product will be used, critical characteristics for the environment and application, and qualification maintenance. These issues are addressed in Quality Assurance Procedure 06QA020014 and supported by numerous documents classified by FCI as "Technical Evaluations".

Testing methods of Commercial Grade Items are defined in Quality Assurance Procedure 04QA704071.

7.6 GOVERNMENT OR PURCHASER SUPPLIED ITEMS

Government or purchaser supplied items are discussed in Quality Assurance Procedure 04QA704055.

SUBJECT

Quality Assurance Manual

CAGE CODE

64818

DATE OF ORIGIN

07/31/02

SECTION

3

PAGE

14CURRENT
REVISION**H**

9 CONTROL OF SPECIAL PROCESSES

9.1 TYPES OF PROCESSES

Special processes utilized by **Fluid Components International LLC** include Welding, Coating, Soldering, Non-Destructive Examination (NDE), Painting, Plating, Passivation, and Brazing. When additional special processes are brought in-house, a review shall be conducted to determine applicable specification compliance as well as training and certification requirements.

Currently, Welding, Conformal Coating, and Soldering are performed in-house. Measuring & Test Equipment used to control or verify quality of special processes shall be in accordance with paragraph 12, "Control of Measuring & Test Equipment", of this section of the manual.

Weld filler metal used for special processes shall be controlled to assure only accepted and correct items are used, and to assure that the filler metal is kept clean and free of contamination. Incoming Weld Fillers shall be processed through Receiving Inspection in accordance with Quality Assurance Procedure 04QA704021, "Weld Filler Metal Control", and certified as directed in paragraph 7, "Control of Purchased Material, Equipment, and Services", of this section of the manual.

Special processes performed by outside vendors (NDE, Painting, Plating, Passivation, and Brazing) are performed in accordance with applicable specifications documented on the Purchase Order or applicable drawings. Special Processes shall be processed on Controlled Purchased Orders in accordance with Quality Assurance Procedure 04QA704003. Items sent out for special processing shall pass through Receiving Inspection where the item and the processing certification shall be reviewed for conformance to the required specifications. The Receiving Inspection Checklist, 05QA000104, shall be used as a guideline to assure that all required information is contained on the Certification.

9.2 PERSONNEL QUALIFICATIONS

Vendors performing NDE shall have personnel qualified to SNT-TC-1A perform the work.

Welders and Welding Procedures shall be qualified and their records shall be maintained in accordance with Quality Assurance Procedure 04QA704039.

Soldering personnel shall be certified to FCI Workmanship Standards Manual, 04QA704057, as a minimum requirement. Personnel shall be trained and certified to other contractually specified requirements as necessary.

SUBJECT

Quality Assurance Manual

CAGE CODE

64818

DATE OF ORIGIN

07/31/02

SECTION

3

PAGE

21CURRENT
REVISION**H**

for each Internal Audit. The Audit Plan will describe the audit team, audit timetable, and audit assignments.

A report to Management (including the President) shall be issued at the end of the audit describing the audit results. The report shall include copies of all Audit Findings and discuss the status, adequacy, and effectiveness of the Quality System. See Quality Assurance Procedure 04QA704008 for detailed instructions.

18.2 EXTERNAL AUDITS

FCI shall perform audits of vendors providing nuclear qualified items. The scope and content of the audit shall be in accordance with Quality Assurance Procedure 04QA704008.

18.3 VENDOR SURVEYS

Fluid Components International LLC shall perform surveys of vendors providing calibration services and vendors providing testing services. Surveys of special process vendors shall be performed when determined necessary by the Quality Assurance Manager. These surveys shall be performed to determine the vendor's capability in complying with FCI contractual requirements or determining continued compliance to contractual requirements. The scope and content of the survey shall be in accordance with Quality Assurance Procedure 04QA704044.

18.4 AUDITOR QUALIFICATION

The audit or survey shall be conducted by a qualified Lead Auditor, and can be assisted by other qualified Auditors. Auditors shall not have direct responsibility for the activities being audited.

Auditor qualifications shall be documented and shall conform to the requirements of Quality Assurance Procedure 04QA704054.