



Micro Precision Calibration, Inc.

Quality Manual

Rev. 5E

Introduction

Executive management of Micro Precision Calibration, Inc. has issued this Quality Manual as a framework for realizing our company mission, values, objectives and quality commitment to employees and customers.

The policies described herein define requirements for all levels of the company, and are implemented through the application, support and continuous improvement of the Quality Management System. Supporting systems, procedures and processes are defined for consistency of application and effective communication within the organization.

The Quality Management System documentation is communicated to, understood by, available to, and implemented by appropriate personnel within the company.

Scope and Facility Profile

This Quality Manual applies to all Micro Precision Calibration employees, for all work carried out in permanent laboratory facilities, at sites away from the permanent facilities, or in associated temporary or mobile facilities.

This Quality Manual is applicable to all functions that have an impact on the quality of our service, and documents our Quality Management System in accordance with the Normative References listed in Section 2.0.

This Quality Manual presents Executive management's commitment to customer satisfaction, policies for quality and continuous improvement, good laboratory practices and technical competence in supplying conforming services. Management and operation of calibration laboratory including repairs and engineering services related to calibration.

The Quality Management System of our company is subject to review and approval by accredited organizations for certification and/or accreditation under the applicable ISO standards.



Micro Precision Calibration consists of the following geographical sites with independent Quality Management System certification and laboratory accreditation:

Domestic:

Micro Precision Calibration, Inc.

- Grass Valley, California
- San Jose, California

- Garden Grove, California
- San Diego, California

- Seattle, Washington
- Portland, Oregon
- Tampa, Florida

International:

Micro Precision Calibration
de Mexico S.A. de C.V.

- Tijuana
- Guadalajara
- Monterrey
- Mexicali

Microprecision Calibration -- Philippines

Micro Precision Calibration -- Thailand

Micro Precision Calibration – Vietnam

Micro Precision Calibration – China

Micro Precision Calibration – Malaysia

Micro Precision Calibration – Qatar

Table of Contents

Table of Contents	4
1.0 Quality Policy	6
Vision.....	6
Mission	6
Core Values	6
Critical Success Factors.....	7
Quality Commitment Statement	8
2.0 Normative References.....	9
3.0 Organizational Structure.....	9
View Executive and Quality Management Organizational Interfaces	9
4.0 Quality Management System.....	9
Documentation Requirements	10
5.0 Management Responsibility	12
General.....	12
Customer Focus.....	12
Planning of Quality Objectives and the Quality Management System	13
Responsibility, Authority and Communication.....	13
Management Review	15
6.0 Resource Management	15
Provision of Resources	15
Human Resources	16
Infrastructure	17
Work Environment.....	17
7.0 Product Realization	18
Planning of Product Realization	18
Customer-Related Processes	19
Design and Development.....	20
Purchasing	22
Production and Service Provision	23
8.0 Measurement, Analysis and Improvement	26
General.....	26
Customer Satisfaction	26
Internal Audit	26
Monitoring and Measurement of Processes	27



Monitoring and Measurement of Product.....	27
Control of Nonconforming Product.....	27
Analysis of Data	28
Continual Improvement	28
Corrective Action.....	29
Preventive Action	29
Document Revision Control History	31
Cross-Reference: ISO 9001:2008 and MPC QMS Documents.....	33
MPC Quality Management Organization	40
ISO 9001-2008 PDCA Process Model	41

1.0 Quality Policy

The Quality Policy establishes and provides the framework for reviewing and communicating our business objectives within our company and to our customers. We realize our commitments to customers, employees, suppliers and partners by measuring our performance and providing for continuous improvement.

Existing and new employees review the Quality Policy during new hire orientation and at general training given throughout the year. The Quality Policy is available on the company Intranet. Copies of the policy may be distributed to external sources at the discretion of management and is reviewed for continuing suitability by Executive and senior management.

Vision

It is our vision to be a recognized leader in quality metrology support services. This will be accomplished by paying attention to both current customer needs and through innovative ideas, for the development of quality support services.

Mission

Our mission is to provide customers with a clear reporting of instrument accuracy and traceability that provides benefits for our customers on a global basis; to deliver consistent and repeatable results; and to create a rewarding environment for our employees.

Core Values

We define ourselves through the following Core Values:

- Service Value
- Dependability
- Speed
- Empowerment and Accountability
- Innovation
- Teamwork
- Integrity
- Achievement and Discipline

■ Service Value

Service value means that we provide the highest testing ratio for the best cost to our customers.

■ **Dependability**

We will be dependable in what we report and store data that is pertinent to our customers' needs.

■ **Speed**

We will deliver the best turn-around with the most cost effective service, based on an instrument's specific use, in a courteous and professional manner.

■ **Empowerment and Accountability**

We will each be responsible for our actions and the quality of our work and accountable for the results of those actions. We encourage employees to develop themselves and their careers to their fullest potential. We recognize that employees have the ability and responsibility to affect in a positive way, our company, other employees and customers.

■ **Innovation**

We will be open to new ways to increase the value that we bring to our customers and will proactively pursue new ways of doing business, implementing process improvements and "change" for the betterment of the company.

■ **Teamwork**

We will foster an environment of enthusiasm and co-operation that enhances customer satisfaction. We will maximize our company's capabilities through cross-organizational support.

■ **Integrity**

This means that we are forthright and have freedom from corrupting influence or motive in all of our dealings with our customers and with each other in the company.

■ **Achievement and Discipline**

It is through achievement and discipline that we define our company and ourselves by the quality of our work and what we accomplish. We will consistently and conscientiously perform our tasks with the aim of satisfying our customers.

Critical Success Factors

Quality objectives and planning stress the need for continual improvement of products and process in order to enhance customer satisfaction grow sales, employee skills and long term profitability. We define our Critical Success Factors as:

- Preferred Supplier
- Financial Growth
- Preferred Employer

■ Preferred Supplier

This means that we strive to be the supplier that our customers value above all others. We realize growth and market penetration through increased sales and satisfied customers. We reduce costs and cycle times through effective use of resources.

■ Financial Growth

This means that we grow our revenue year over year as we expand our services through repeat business and referral and customer loyalty.

■ Preferred Employer

This means that we will further improve employee satisfaction, maintain low turnover, and recruit top talent in all areas of our business.

Quality Commitment Statement

Micro Precision Calibration, Inc. is committed to meeting and exceeding customer expectations by providing complete, reliable, reproducible and accurate calibration and repair services in compliance with ISO/IEC 17025 and laboratory accreditation, and in accordance with stated methods and customer requirements.

The quality and reliability of services offered by our company are maintained at levels meeting and exceeding the expectations of our customers and with contractual requirements. The Quality Management System is designed to achieve the [Critical Success Factors](#) (Section 1.0).

Towards this end, we will relentlessly strive for customer satisfaction, cost competitiveness and continuous improvement in all aspects of our business. We will offer services that meet a well-defined customer or market need, purpose, use and in all respects, meet customer's expectations. We will offer services that comply with all applicable standards, specifications, and requirements of society (i.e., safety), including an awareness of environmental needs during the service phase. We will offer services that are economically supplied and offered at competitive prices.

These initiatives will involve all employees. By communicating the importance of teamwork, empowerment and accountability we will show employees they are our most valuable assets. We will demonstrate our commitment to achieve the highest level of customer support and satisfaction with integrity and ethics in business transactions while embracing quality in all that we do.

Top management shall ensure the integrity of the management system is maintained when changes to the management system are planned and implemented.

All employees are required to familiarize themselves with the Quality Management System documentation and implement the policies and procedures in their work.

2.0 Normative References

The following industry standards and documents form the basis part of the Micro Precision Calibration, Inc. Quality Management System and are incorporated as referenced herein:

- ISO/IEC 17025, *General Requirements for the Competence of Calibration and Test Laboratories*
- ISO 9001-2008, *Quality Management Systems—Requirements*
- ISO 9000-2005, *Quality Management Systems—Fundamentals and Vocabulary*

3.0 Organizational Structure

The organizational structure and relationships of divisions to corporate are defined within the Quality Management System to ensure that technical operations, administrative and quality management, and support services, including human factors affecting quality are under strict control by management through the Quality Management System.

Specific organizational details are maintained in Micro Precision Calibration, Inc. procedures and locally at all Divisions. International divisions have the authority and responsibility (where necessary) to translate the quality policies into their native languages and according to local regulations and requirements upon review and approval by Executive Management.

[View Executive and Quality Management Organizational Interfaces](#)

4.0 Quality Management System

We realize our quality strategies and commitments by implementing and continually improving the effectiveness Quality Management System. Our management has a commitment to comply with International Standards. All employees are responsible for adhering to the commitments and policies described within this manual.

The fundamental purpose of this Quality Manual is to define the existence of activities and their interaction necessary for ensuring the effective and consistent operation and control of processes, procedures, and record keeping throughout the company. These include sales and marketing,

technical support, purchasing, inspection and testing, packaging and storage, and shipping and delivery. The intent of this manual is to facilitate the development of effective criteria and methods needed to support and control the processes, to ensure that needed resources and information are available, and that measures and data used to determine satisfactory performance are planned and realized according to plan.

Quality Management System processes that are outsourced ^(note), which affect product conformity to requirements, will be identified and controlled within the Quality Management System consistent with the policies of this manual.

Note: An outsourced process is identified as one being needed for the organization's quality management system but chosen to be performed by a party external to the organization

The sequence and overall interaction of processes required to maintain and improve the Quality Management System can best be described by using the ISO 9001-2000 model of a process-based quality management system incorporating the PDCA cycle (plan-do-check-act).

[View ISO 9001-2008 PDCA Process Model](#)

MPC implements this process model through its Calibration System Description and associated Appendices.

Documentation Requirements

The Quality Management System is defined within this Quality Manual and associated documentation. The Quality Manual and included Quality Policy, is the top tier document. It is supported by the Calibration System Description and referenced Appendices (operational and administrative procedures) and Calibration Procedures (externally and/or internally developed), which are the second tier; and forms, records and work instructions which are the third tier.

All documents, data and instructions, required to meet the intent of the Quality Management System are available where and when needed. This includes externally published standards and requirements. Appended to this manual are cross-references of quality documents providing visibility and direction to lower level processes.

■ Control of documents

Micro Precision Calibration has established requirements for documents needed to demonstrate suitability and effective conformance to requirements, operation and control of processes. Documented procedures address internal and external origin management system documents, including authority for and adequacy, revision, review, approval and re-approval, identification, legibility, availability and obsolescence requirements. Unique identification includes issue date and/or revision identification, page numbering, total number of pages and issuing authorities.

Authorized editions of documents are available at all locations where operations essential to the effective functioning of the laboratory are performed. Invalid or obsolete documents are removed from points of issue or use or otherwise assured against unintended use; documents historically preserved are suitably marked. Amendments shall be clearly marked, initialed and dated. The term “documents” include regulations, standards, other normative documents, test and/or calibration methods, software, specifications, instructions and manuals.

Generally, all documents are maintained electronically to ensure availability and control of documentation at a single point, so that when the master is updated it is immediately available to all. A document master list or equivalent is used where appropriate to ensure the latest revision is identified for use.

Documents and work instructions are provided as required by ISO standards listed in Normative References (Section 2.0), and where needed to ensure quality of the process, product, or services provided. Responsibility for creating or updating Quality Management System documents is assigned to designated individuals who are best placed in the organization to evaluate the processes and methods used to meet the requirements (also see Section 5.0).

The designated process owners and/or authorized personnel will approve new or changed processes, procedures, instructions, or documents, as applicable, prior to issue. Where practical, revised or new text is identified in the document or appropriate attachments. Reviews, updates and re-approval of documents are performed in the same manner as original documents, and reissued as soon as practicable. Documents are not revised by hand notations pending reissue; however if this should become necessary, documented procedures will identify the method, requirements and authorities. Procedures are established to describe how changes in electronic documents are made and controlled.

Requirements for calculations and data transfers, use of computers and automated test equipment are controlled in accordance with the Calibration System Description.

■ Control of records

Micro Precision Calibration has established requirements for quality records in order to demonstrate evidence of conformance to requirements and effective operation of the Quality Management System. Documented procedures address legibility, identification, collection, indexing, access, filing, storage, maintenance, protection, retrieval, retention time and disposition, and back-up of electronically stored records, including preventing unauthorized access to or amendment of these records. Records include quality and technical records and are held secure and in confidence.

Records are legible and stored for accessibility in a suitable environment to prevent damage, deterioration or loss. Control of quality records includes both electronic and hard copy media. Retention periods are established and recorded. Records are available to the customer for evaluation in accordance with contract requirements.

Technical records include original observations, derived data and sufficient information to establish an audit trail, calibration records, staff records and a copy of each test or calibration certificate for the defined retention period. Original observations, data and calculations are recorded at the time made and are identifiable to the specific task.

Test or calibration records identify the personnel responsible for the performance of the test and/or calibration and checking of results, and contain sufficient information to facilitate, if possible, identification of factors affecting the uncertainty and to enable repeatability of the test or calibration as close as possible to the original conditions. Quality records include records such as audit reports, management reviews and corrective and preventive actions. Specific record requirements are addressed throughout the Quality Manual.

Any mistakes occurring in records are crossed out with the correct value entered alongside, and are signed or initialed by the person making the correction. Similar measures are defined for correcting mistakes in electronic records.

5.0 Management Responsibility

General

Executive management demonstrates its commitments by establishing the Quality Policy and, in partnership with senior management, by:

- Developing, implementing and continually improving the Quality Management System;
- Communicating and maintaining awareness of the importance of meeting customer requirements;
- Communicating the importance of meeting statutory and regulatory requirements;
- Establishing quality objectives and planning;
- Carrying out product realization in such a way as to meet the requirements of Normative References identified in Section 2.0 and to satisfy the needs of the customer;
- Performing management reviews;
- Ensuring the availability of resources.

Senior management throughout Micro Precision Calibration establish consistency of the organization's purpose, and create and maintain an environment in which people can become fully involved in achieving the organizational objectives ([Critical Success Factors](#)).

Customer Focus

Micro Precision Calibration, Inc. is a customer-oriented company, and is committed to fully understanding the needs and expectations of customers, employees, suppliers and partners. Senior management ensure that an effective system of management tools exist to enable the company to realize these commitments. Customer requirements are considered during planning of product realization.

Planning of Quality Objectives and the Quality Management System

Executive and senior management consider quality objectives in business planning and during review of the effectiveness of the Quality Management System. Quality objectives are established at relevant functions and levels of the company and are measurable and consistent with the Quality Policy (Section 1.0). Measurements of product and service performance (Section 8.0) are used as a means for realizing these objectives. The Quality Management System is established and its integrity maintained through planning, including during changes to the system.

[View Measurable Objectives](#)

Responsibility, Authority and Communication

Executive management establishes the Quality Policy, commitment for compliance with requirements, and determines the appropriateness of the Quality Policy for the company.

Executive and senior management ensure that the Quality Policy is communicated and understood within the company and is reviewed for continuing suitability, use the Quality Policy when establishing and reviewing quality objectives, and commit to continually improve the effectiveness of the Quality Management System.

Senior management defines the responsibility, authority and interrelationships of all personnel who manage, perform and verify work affecting quality of the product. Senior management ensures that its personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of the objectives of the management system. Senior management ensures that adequate supervision and appropriate communication processes are provided for calibration and testing personnel, including trainees, by personnel familiar with methods/procedures and purpose of each test/calibration and the assessment of the test/calibration results.

Senior management implement a management system policies and procedures to ensure the protection of customer confidential information and proprietary rights, including electronic storage and transmission of data, and also avoid involvement in activities that would diminish confidence in laboratory competence, impartiality, judgment or operational integrity

Senior management, operational managers and designated process owners, as appropriate, establish processes, procedures and documentation to ensure compliance to the Quality

Management System. Senior management effectively communicates the Quality Management System processes throughout the organization through many means, including employee briefings, visible management activities such as management reviews and electronic media communications.

Executive and senior management appoint deputies for key managerial personnel, where and when appropriate. Executive and senior management retain ultimate responsibility for the execution of the Quality Management System, even when delegated to others.

The Technical Manager and designees is responsible for technical issues to ensure the competency of the laboratory. The Technical Manager and designees oversee technical operations and ensure that needed resources exist. Technical issues encompass development, appropriateness, adequacy and use of selected calibration methods and procedures, alternate calibration methods or procedures, the measurements uncertainties program, the interlaboratory comparisons program, evaluation of calibration and test results and traceability, selection, maintenance and validation of measurement standards and test equipment, and technical competence evaluations and development programs for technician personnel (also see Section 6.0).

Executive management has appointed the Director of Quality Assurance or designees with the authority and responsibility, irrespective of other responsibilities, for:

- Ensuring the processes of the Quality Management System are established, implemented and maintained;
- Compliance to **ISO 9001-2008**, ISO/IEC 17025 and laboratory accreditation requirements;
- Reporting to Executive management on the performance of the Quality Management System, including needs for improvement;
- Promoting awareness of customer requirements throughout the organization.
- Shall seek positive and negative feedback from its customers. The feedback shall be used and analyzed to improve the management system, testing and calibration activities and customer service.

The Director of Quality Assurance and designees is responsible for coordinating, monitoring, and auditing of the Quality Management System. The Director of Quality Assurance and designees has the organizational freedom and authority to initiate action to prevent the occurrence of nonconformities, record problems, initiate corrective actions, resolve customer complaints, verify solutions, and if necessary, stop those processes until such time as they fully comply.

Quality Assurance facilitates the development, implementation and continuous improvement of the Quality Management System. The Quality Management System is arranged to ensure that management and personnel are free from any undue internal and external commercial, financial or other pressures and influences that may adversely affect the quality of their work.

Quality Assurance possesses the independence and authority to stop product processing deemed necessary. Employees at all levels have authority and are responsible for identifying and initiating action that will remove or prevent nonconformity in the product, process and Quality Management System, and prevent or minimize departures from established requirements.

Management Review

Executive management conducts a management review of the Quality Management System performance periodically, at least once a year, according to a predetermined schedule. Quality Assurance facilitates the review and records conclusions. Senior management conducts management reviews periodically at their geographical locations and participates in the annual management review with Executive management. Reviews are conducted to ensure the continuing suitability and effectiveness of the Quality Management System and introduce necessary changes or improvements.

Management review inputs include audit results, customer feedback and complaints, process performance and product conformity, corrective and preventive actions, follow-up from prior management reviews, suitability of policies and objectives and procedures, reports from managerial and supervisory personnel, assessments by external bodies, results of interlaboratory comparisons or proficiency tests, changes in the volume and type of work, changes to the Quality Management System and improvement recommendations, and other relevant factors such as Quality Control activities, resources and staff training.

Management review outputs include decisions and actions designed to improve the effectiveness of the Quality Management System and its processes, products and resources. Revisions to the Quality Management System are made as necessary to ensure the quality of the product, customer requirements and the needs of the company, both for current and future business needs. Results of these reviews are recorded, including the actions that arise from them. Management ensures that actions are implemented within an appropriate and agreed timescale. Reviews form a basis for our continuous improvement efforts.

6.0 Resource Management

Provision of Resources

Senior management is responsible for ensuring that adequate resources for management, performance of work and verification activities, including internal audits, are identified and communicated to the appropriate level within the organization. Executive management ensures that adequate resources for the implementation and achievement of the organizational policies and objectives are made available. These may include people, supplies, information, infrastructure, work environment and financial resources.

Human Resources

Micro Precision Calibration recognizes that people are their most valuable asset and strives to make certain that people are properly qualified and trained to perform the tasks required of them and be effective in executing their duties. Senior management is responsible for identifying the necessary competence for personnel performing work affecting **conformity to product requirements**, and for ensuring that sufficient and appropriate human resources are made available to deliver value to customers and realize quality policy and quality objectives.

Only qualified people are hired and trained as needed to successfully complete their assignments. Competent personnel operate measurement and test equipment, perform tests and calibrations, evaluate results and sign test reports/calibration certificates. In order to manage and develop people effectively, individual education, experience and demonstrated skills are evaluated, monitored and measured through recruitment, ongoing training, and on-the-job performance and advancement opportunities. These factors are used to qualify personnel performing specific tasks, as required.

Documented procedures address training needs and providing training to personnel. The training program is relevant to present and anticipated needs of the laboratory. The identification of training needs, training achievement and training records are core processes for the development of people.

Training is provided on an as-needed and planned basis to ensure that personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of the quality objectives. Employee suggestions and opinions are utilized in improving our work environment by and for our employees. Senior management formulates goals with respect to education, training and skills of laboratory personnel.

All employees, or personnel under contract to the laboratory, whose work affects quality require appropriate training and/or experience to perform their tasks. No employee, including contracted and additional technical or key support personnel used, performs tasks unassisted until his or her training/competence has been confirmed as being in accordance with the laboratory requirements and Quality Management System. The overall effectiveness of training is evaluated through appraisals and feedback from internal audits.

Records are maintained on personnel competence, including educational and professional qualifications, training, skills and experience of personnel, including contracted personnel, and include the confirmation date of authorization and/or competence. Current job descriptions of managerial, technical and key support personnel involved in tests and/or calibrations are maintained. Authorized signatories lists and organization charts are maintained to identify the responsibilities and interrelation of personnel (Section 3.0) performing tests and/or calibrations, issuing test reports/calibration certificates, providing opinions or interpretations, and operating particular types of equipment.

Infrastructure

Micro Precision Calibration, Inc. is committed to providing and maintaining adequate and appropriate laboratory facilities. Senior management have responsibility for ensuring that sufficient types of measurement standards, test equipment and reference materials needed to perform the work, the laboratory building and utilities (see Work Environment below) and mobile units are available, adequate and properly maintained.

Computers and automated test equipment are maintained to ensure proper functioning and are provided with the environmental and operating conditions necessary to maintain the integrity of test and calibration data.

Each employee is responsible for advising senior management if there are any problems with the infrastructure or equipment. A virtual private network is provided to enable effective communication and collaborative working independent of location. Mobile units are provided and maintained with suitable environments and equipment and in a working condition to facilitate support services at customer facilities.

Work Environment

Micro Precision Calibration, Inc. recognizes that the physical environment in which people work influences their motivation, satisfaction, development and performance and is essential to the accuracy and quality of the products and/or services they produce. As such, Micro Precision Calibration, Inc. provides a work environment that supports the achievement of organizational policies and objectives leading to overall employee satisfaction.

Senior management ensures the physical environment is established, controlled and maintained, including but not limited to energy sources, lighting and environmental conditions, to facilitate correct performance of the tests and/or calibrations.

Senior management ensures that technical requirements for accommodation and environmental conditions that can affect results are documented, and that environmental conditions do not invalidate results or adversely affect the required quality of measurement. Particular care is exercised at sites other than the permanent laboratory. Accommodation and environmental requirements of ISO/IEC 17025 and laboratory accreditation are delineated in the Calibration System Description.

Executive management provides the equipment (measurement standards, hardware and software) necessary to achieve individual, divisional and corporate objectives.

7.0 Product Realization

Planning of Product Realization

Micro Precision Calibration, Inc. is committed to realizing its products and services throughout all stages of servicing, implemented through the plan-do-check-act (PDCA) process (Section 4.0). Planning for product realization minimizes and eliminates waste of time and resources and achieves quality policy objectives ([Critical Success Factors](#)) identified in Section 1.0.

Planning is essential in achieving and maintaining ISO certification and laboratory accreditation and for the retention of satisfied customers and employees. Senior management identifies the product realization stages and appropriate controls at each stage, including responsible personnel, the extent of review, verification and validation required. Process maps identify interfaces between groups as well as geographical sites. Verbal and written communications are used as appropriate to ensure that needs and requirements are clearly understood.

Planning activities consider the following:

- Determining the quality objectives, product requirements and what is necessary to effectively implement the Quality Management System
- Service to customers and determination of their needs and requirements
- Meeting requirements for ISO certification and laboratory accreditation
- Needed processes, documents and resources
- Permanent laboratory and on-site servicing requirements
- Adequacy of the product and services to meet needs and requirements and necessary verification and validation activities
- Appropriate monitoring, inspection, testing and product acceptance criteria to determine conformance to requirements
- Records required as evidence of product conformance and for the Quality Management System as a whole

Except as specifically required by the ISO 9001-2000 or ISO/IEC 17025 Standards, Accreditation body policies, or specific customer requirements, the use and extent of written processes, procedures and instructions is implemented commensurate with the training and experience of personnel (i.e., documented processes are not required where the process is known and practiced by all).

Senior management maintains Quality Plans that are reviewed during periodic Management Reviews. Planning outputs (e.g., control plans, operations plans, interlaboratory comparison

plans, quality plans, etc.) are presented in a form suitable to the method of operations or specified requirements.

The general requirements for testing and calibration laboratory competence as specified in ISO/IEC 17025 are delineated in the Micro Precision Calibration System Description.

Customer-Related Processes

Micro Precision Calibration, Inc. has established processes for understanding our own organization, our product and services, our customers' needs and requirements (through delivery and post-delivery), our capability to provide what our customers want, and ensuring that our customers are satisfied with what we provide. Service to the customer or their representatives is provided through cooperation in clarifying the customer's requests and/or the monitoring of the laboratory's performance in relation to the work performed, while maintaining confidentiality to other customers.

- *Determination of requirements related to the product*

Customer-related processes consider marketing, sales and order handling, processing of changes to existing orders or contracts, and communication relative to product design and development, order status and delivery forecast, requests for concession, customer inspections, audits and feedback, including complaints, and warranties and apply to both internal and external customers. Requirements not stated by the customer but necessary or implied, statutory and regulatory requirements, including local laws and customs, and organization requirements are determined.

- *Review of requirements related to the product*

Processes and procedures exist for the review of customer requests, tenders, orders and contracts (including partner arrangements) at the initiation of an order and upon additions and changes to orders occurring during product realization. This review includes ensuring the order or contract (whether written or verbal) is adequately defined, documented and well understood and accepted by both parties and confirmed, differences are resolved prior to commencing work, and that we have the capability and resources to meet the requirements, prior to acceptance.

Senior management, operational managers and designated process owners are responsible for product realization, through delivery of product, and when needed, provide updated reports on the status of orders and contracts. The customer is notified of any deviation from the contract.

Customer orders or contracts, pertinent discussions pertaining to the customer's requirements or the results of the work during the period of execution of the contract and reviews of subcontracted work, and results of the order review, significant changes, and actions arising from the reviews, are maintained for a minimum of five years. This enables traceability of customer requirements for the product if needed and facilitates ongoing communication and support.

Amendments and changes to customer requirements are reviewed in a similar manner to new orders and, once accepted, are communicated to all parties affected. Customer satisfaction is paramount and is given consideration in all activities.

■ Customer communication

Product and service information is available to customers through multiple channels, and customers are able to provide feedback directly to Micro Precision Calibration, Inc. Proactive communication is achieved through regular communication with customers during sales and marketing, order review processing, customer servicing and customer surveys. The organization uses electronic methods to record feedback, inquiries, contracts or order handling and processing improvements. Our laboratory management is committed to good professional practices and to the quality of its testing and calibration in servicing our customers.

It is our policy to respond to customer or other party complaints courteously and professionally. All complaints are analyzed and appropriate action taken to remedy the complaint in a defined timely manner. Records are maintained of all complaints and of the investigations and corrective actions taken (Section 8.0).

Design and Development

All Micro Precision Calibration, Inc. sites are responsible for service design and development processes. We work with customers to translate customer needs and requirements to operations for product realization. Prior to accepting work for a particular type of customer, such as nuclear or other specialized or regulated industry customers, a feasibility study or development of special service delivery processes or facilities may be required. New or special services require design and development planning prior to implementation.

Senior management is responsible for identifying design and development stages and requirements. This includes the design and development of the Calibration System Description, which addresses calibration methods and method validation, the measurement uncertainties program and internal interlaboratory comparison programs, adequacy of personnel, and measures for ensuring the control, adequacy and traceability of Micro Precision Calibration's measurement standards and test instruments.

Micro Precision Calibration, Inc. is committed to good laboratory practices through compliance with ISO/IEC 17025 and laboratory accreditation requirements. We determine the various product design and development stages and appropriate reviews, verifications and validations required, as well as responsibilities within the design and development processes including process inputs and outputs. Planning output is updated as appropriate during service design and development. Interfaces between geographical sites are managed to ensure effective communication and a clear assignment of responsibility and performance by authorized facilities.

■ Service design and development inputs

Micro Precision Calibration, Inc. is flexible and responsive to market, industry, business and customer-defined inputs, and pays particular attention to resolving incomplete, ambiguous or conflicting requirements; including defining and developing appropriate functional, performance and maintenance (e.g., product recall servicing) requirements in conjunction with customers throughout product realization. Inputs relating to servicing requirements are determined and records maintained.

■ Service design and development outputs

Outputs are recorded in a manner that enables verification against the relevant inputs and are approved by authorized signatories prior to issue or implementation. Customer requirements and the need for verification against inputs are considered in the design of documentation used internally or provided to customers or suppliers. Outputs contain or reference servicing acceptance criteria, specify essential servicing characteristics, and provide appropriate information for purchasing, product and service provision.

■ Service design and development review

Senior management, operations managers and process owners are involved in the review of the product according to their areas of responsibility and authority. Reviews are performed in accordance with planned arrangements at suitable stages, and as applicable, consider servicing history, current results and findings. Functional personnel (Cross-Functional Process Map) interface with each other as necessary to identify and resolve conflicting information and determine necessary actions, required accuracies and processes or procedures necessary when evaluating the ability of the results to meet input requirements. Records of the results of the reviews and any necessary actions are maintained.

■ Service design and development verification

Documentation and measurement results are systematically checked in accordance with planned arrangements, at appropriate stages during product realization, to ensure that service design and development outputs have met the service design and development inputs. Verification is carried out by qualified personnel and includes both self-verification and independent verification. Customers may participate in verification at the time of delivery of the product. Results of the verification and any required actions are recorded and maintained as quality records. Verification may be indicated by initialing and dating service design and development documents to signal completion of the work, and/or be recorded by designated and responsible individuals by performing data entry for collection purposes or to communicate required changes. Verification methods are described in the Appendices of the Calibration System Description.

■ Service design and development validation

Validation is performed in accordance with planned arrangements, prior to delivery where practical, to ensure that the product and product realization process is capable of meeting intended results. Validation methods are described in the Calibration System Description, and are

demonstrated through methods such as proficiency testing and interlaboratory comparisons, in-process service checks and measurement validations, and periodic laboratory audits. Records of the results of validations and any actions necessary are maintained.

■ Control of service design and development changes

Process and product realization changes are controlled when changes to the system or methods occur. Control methods include obtaining customer approval, instituting checking and control documents such as forms or electronic methods for recording changes to affected procedures and product realization documents, communication, on-going monitoring of effects of changes to work in progress and review for evaluation of the effect of changes on product and services already delivered. Records of the results of the review of changes and any necessary actions are maintained.

Purchasing

■ Purchasing process

Micro Precision Calibration, Inc. has established requirements, procedures and controls to ensure that purchased products and services conform to specified requirements. The type and extent of control applied to suppliers and the purchased product depends upon the impact of the purchased product to the quality of the product we provide our customers.

Micro Precision Calibration, Inc. will use Approved Traceability Suppliers (including those supplying critical products such as reference materials and laboratory consumables) when subcontracting calibrations or procuring products which impact the quality of the tests and/or calibrations. When it is necessary to subcontract work, competent subcontractors will be used. The customer is informed in writing, and customer approval is obtained, preferably in writing, prior to subcontracting. Micro Precision Calibration remains responsible to the customer for subcontracted work, except where the customer or regulatory authority specifies the subcontractor to be used.

The Director of Quality Assurance is responsible for specifying criteria for supplier selection and defining criteria for supplier evaluations and periodic re-evaluations, including necessary follow-up actions and maintaining the Approved Traceability Supplier List and records as described below. Traceability supplier evaluations include but are not limited to:

- Supplier ability to achieve consistent quality and delivery to specified order requirements
- Cost-competitive pricing
- Subcontractor competency and records of evidence of compliance to ISO/IEC 17025

Senior management is responsible for establishing criteria and conducting the evaluation, re-evaluations and approval of other suppliers (i.e., suppliers not used for traceability purposes).

Records of periodic supplier evaluations and on-going performance monitoring, including actions to check compliance and any follow-up actions, must be controlled and maintained.

■ Purchasing information

The purchase instructions provided to suppliers contain appropriate information that clearly defines the product needed and applicable characteristics and, as appropriate, the time frame for delivery, services required, governing quality system and compliance standards, and any procedures, equipment or personnel requirements as applicable. Senior management is responsible for ensuring that procurement documents are reviewed and approved for technical content prior to issue to the supplier.

■ Verification of purchased product

Micro Precision Calibration, Inc. has established processes and requirements for receipt inspection and in-process inspection of purchased products. Purchased supplies, reagents and consumables are not used until they have been inspected or otherwise verified as complying with specifications or requirements defined in the methods for the tests or calibrations concerned. Records of actions taken to check compliance are maintained.

Where specified in contracts, Micro Precision Calibration, Inc. or our customers will reserve the right to visit suppliers to verify purchased product. The method of verification and conditions of product release will be identified in purchasing documents. Senior management is responsible for organizing their resources so as to ensure that the receipt of all materials, supplies, services and equipment conforms to order requirements.

Production and Service Provision

■ Control of production and service provision

Micro Precision Calibration, Inc. is committed to planning and carrying out product realization under controlled conditions. Controls include providing: adequate monitoring and measuring devices and equipment (including computer systems), appropriate guidance on its use and availability, implementing inspections, monitoring and performance measurements or criteria, implementing release, delivery and post-delivery activities, identifying authorized signatories and providing qualified Quality Control inspectors. Clear and understandable procedures or work instructions, are provided, where necessary, for the achievement of product and service conformity, where the absence of procedures would adversely affect product quality.

Quality records are maintained to provide evidence of effective operation of processes. Mechanisms for taking and tracking actions to eliminate nonconformities and analyze opportunities for improvement of the process are established and implemented.

Senior management is responsible for providing effective processes and controls to ensure that product realization is achieved as planned. Senior management determine personnel

competency and ensure that personnel involved in these activities acquire necessary training to supplement the process documentation (Section 6.0). Service warranty is provided with the product.

■ Validation of processes for production and service provision

The approval of new or modified processes and inspection, measurement and test equipment is the responsibility of the Director of Quality Assurance or designees and the Technical Manager(s) or designees at the geographical sites and is described in the Calibration System Description. When required, analysis and approval is performed and appropriate records are maintained. Processes that cannot be fully verified by subsequent inspection and testing of the product and special processes which require prequalification of capability will have operational requirements documented and controlled.

Top management shall provide evidence of commitment to the development and implementation of the management system and continually improving its effectiveness. Top management shall communicate to all employees the importance of meeting customer, statutory and regulatory requirements.

■ Identification and traceability

Micro Precision Calibration has established a system for identifying test and/or calibration items, including any sub-division of groups of items and the transfer of items within and from the laboratory. Products and their service status are controlled through unique identification on the product and in electronic records to maintain their identification and status throughout product realization. The status and identity of items are traceable with respect to monitoring and measuring and to ensure that items cannot be confused physically or when referred to in documents or records (also see Control of Monitoring and Measuring Devices below and the Calibration System Description).

■ Customer property

Micro Precision Calibration, Inc. exercises care at all times while customer property is under its control or use. Customer property is identified, verified, protected, and safeguarded. In the event of customer property being damaged or lost, the customer is notified, records generated and agreed actions are taken. Confidentiality of customer information and intellectual property is protected from inadvertent release or exposure to other risks such as fraud. Personnel receive appropriate indoctrination and awareness training for the protection and care of customer property. Confidentiality agreements are employed during hiring and in contracts with customers.

■ Preservation of product

Micro Precision Calibration has established requirements and processes for the effective receipt, handling, storage (including archive and backup mechanisms of records), protection, packaging, preservation, retention and/or disposal, and transport/delivery of test and/or calibration items,

product and service documentation to customers to prevent damage, deterioration, and contamination of product during processing and delivery. All provisions necessary are identified and implemented to protect the integrity of the test or calibration item, and to protect the interests of the company and the customer.

■ Control of monitoring and measuring equipment

Micro Precision Calibration, Inc. has established and maintains a comprehensive Calibration System Description, including necessary documented operation and calibration procedures, to select, control, calibrate and maintain its inspection, measuring and test equipment, including test software, used in the calibration servicing of customer-supplied equipment. This equipment is used and maintained in a manner that ensures that the measurement uncertainty is known and is consistent with required and stated measurement capability.

The method of calibration used by competent outside laboratories and traceability of measurement and measurement results, including measurement uncertainty, will be known and reviewed.

The Calibration System Description is designed and operated to ensure valid results using inspection, measuring and test equipment that are:

- Adjusted or re-adjusted as necessary and calibrated before and after any adjustment
- Calibrated or verified at specified and defined intervals to prove that they are capable of verifying the customer's equipment, prior to release for use
- **Identified to determine its calibration status**
- Safeguarded from adjustments that would invalidate the measurement result
- Protected from damage and deterioration during handling, maintenance and storage
- Operated by qualified and authorized personnel using up-to-date instructions and manufacturer manuals, as applicable, on use and maintenance and that
- Calibrations and measurements made by Micro Precision Calibration, Inc. are traceable to the International System of Units (SI) by means of an unbroken chain of calibrations or comparisons all having stated uncertainties, and linked to relevant primary standards of the SI units of measurement, by reference to national or international measurement standards or intrinsic standards of measurement
- Calibrated by bodies/organizations that can provide traceability as described above

[View Calibration System Description](#)

The extent and frequency of intermediate checks are defined. All instruments, measurement and test equipment are reviewed under the Calibration System Description and any devices identified

as not requiring calibration are suitably labeled and may not be used to verify or calibrate products to requirements.

Measurement technical data validating functionality of equipment is provided to the customer as required. Records are maintained of service history, validations, measurements and environmental conditions to facilitate repeatability and reproducibility, and as evidence of control.

8.0 Measurement, Analysis and Improvement

General

Micro Precision Calibration, Inc. is committed to continual improvement of its overall performance and recognizes that effective decisions are based on the analysis of data and information. Accordingly, products and services are measured and evaluated in line with the [Critical Success Factors](#). These measurements are reviewed and refined on an ongoing basis to determine product conformance and effectiveness and conformance of the Quality Management System, and where improvement (including change) may be required. These measurements are used as a means to quantify the required actions needed and verify improvement.

In order to assure integrity of all measurements being made, whether on a product or a process, the repeatability and reproducibility of the measure is ascertained. Periodic measurements over time facilitate trend analysis in addition to measurements providing point-in-time data.

Customer Satisfaction

Methods are provided for monitoring and using customer feedback and perceptions as to whether the customer requirements have been fully met. Measures of performance are identified and reviewed by senior management to drive continuous improvement. Actions arising from this review are recorded and reviewed during Executive and senior Management Reviews.

Note: Monitoring customer perception can include obtaining inputs from customer satisfaction surveys, customer complaints and compliments reports, warranty claims

Internal Audit

Micro Precision Calibration, Inc. has established requirements for internal audits at planned intervals in order to demonstrate conformance to requirements and planned arrangements, and to determine the effective implementation and maintenance of the Quality Management System. Documented procedures address the responsibilities and requirements for selection, planning, execution, **establishing records**, reporting results, maintaining records **and results**, and closure of internal audits of processes, to determine compliance to ISO standards (Section 2.0), and Laboratory Accreditation requirements.

The audit program is planned and conducted according to a predetermined schedule. The audit program considers the status and importance of each process, operation or areas to be audited,

including testing and calibration activities, and considering results from previous audits. Requirements for the audit criteria, scope, frequency, and methods are defined in the audit plan. Individuals who are independent of the operation or process being audited, and who are qualified and trained in auditing, conduct the audits. The Director of Quality Assurance plans and organizes audits as required by the schedule and requested by management and ensures impartiality and objectivity when selecting auditors and conducting audits.

The area of activity audited, the audit findings and corrective actions that arise from them are recorded. Management responsible for the area audited ensures that actions are taken without undue delay to eliminate detected nonconformities and their causes. When audit findings cast doubt on the effectiveness of operations or on the correctness or validity of tests or calibrations results, timely corrective action is taken, including notification of customers in writing if investigations show that laboratory results have been affected. The implementation and effectiveness of corrective action taken is verified during follow-up audit activities and verification results are reported.

Monitoring and Measurement of Processes

Measures of performance are identified and monitored as appropriate to determine the effectiveness of processes within the Quality Management System. These measures demonstrate our ability to achieve planned results. When processes are not achieving desired results corrective or preventive action will be taken to remedy the situation, and ensure product conformance.

Monitoring and Measurement of Product

Product characteristics are monitored and measured at appropriate stages to ensure conformance to requirements throughout product realization. Quality Assurance provides necessary guidance for monitoring, measuring and reviewing the product prior to release or delivery. Quality Control reviews the product prior to release or delivery. Resulting data is recorded in such a way that trends are detectable. Statistical techniques are applied where practicable to reviewed results.

Quality Control methods provide for control and validation of conformance to planned arrangements and are described under Quality Control in the Calibration System Description.

Records provide evidence of conformity with the acceptance criteria and indicate the person(s) authorizing release of the product. Customer approval of product release is obtained where applicable.

Control of Nonconforming Product

Micro Precision Calibration, Inc. has established requirements for controlling nonconforming products when any aspect of our testing and/or calibration work, or the result of our work, do not conform to our own procedures or the agreed requirements of the customer. Requirements are implemented in order to prevent the unintended use or delivery of nonconforming products. Documented procedures address:

- The responsibilities and authorities for the management of nonconforming work, including halting work and withholding test reports and calibration certificates, as necessary;
- Evaluation of the significance of the nonconforming work;
- Taking corrective actions immediately, together with any decision about the acceptability of the nonconforming work;
- Where necessary, customer notification, recall of work and responsibility for authorizing the resumption of work;
- Requirements for the proper identification, documentation, segregation (when practical), and appropriate disposition (e.g., rework, repair or scrapping) of nonconforming work.

When a product, material or information is found to be defective or nonconforming, it is clearly identified and held until appropriate disposition is determined and implemented. Where it is evident that the nonconforming work could recur, or where doubt exists as to compliance with our own policies and procedures, the corrective action procedures and process are followed.

Nonconformances require that affected parties be notified. Records of the nature of nonconformities and any subsequent action taken, including concessions obtained, are maintained.

Analysis of Data

Company-wide data pertaining to the suitability, performance and effectiveness of the Quality Management System is collected, reported to and reviewed by senior and Executive management for improvement opportunities. These performance measurements are analyzed at point-in-time for trends over time, considering efficiencies, supplier and delivery performances, measures of process integrity, product conformance, employee participation and customer satisfaction, and opportunities for preventive action. Senior management reviews their operations for opportunities to apply statistical tools for the purpose of improving the capabilities of their processes and product performances.

Continual Improvement

Continual improvement is systematically achieved by implementing the commitments defined in Section 1.0 and the following:

- Corrective and preventive actions
- Audit results

- Analysis of data
- Management reviews

Corrective Action

Micro Precision Calibration, Inc. has established requirements for corrective action in order to eliminate the cause of nonconformities. Corrective actions are appropriate to the effects of the nonconformities encountered and are taken to prevent recurrence. Documented procedures define responsibilities and requirements for:

- Designating appropriate authorities for implementing corrective action when nonconforming work or departures from policies and procedures in the management system are identified;
- Reviewing nonconformities, including customer complaints;
- Determining and investigating the root cause(s) of nonconformities and evaluating the need for action to ensure that they do not recur;
- Determining and implementing appropriate action(s) needed, commensurate with the magnitude and risk of the problem;
- Documenting and implementing required changes resulting from the corrective action investigations;
- Monitoring the results to ensure the corrective actions taken have been effective;
- Conducting additional audits where the identification of nonconformances or departures cast doubt on the compliance to procedures, policies, or ISO standards (Section 2.0);
- Maintaining records of the results of actions taken and reviewing corrective action taken.

Preventive Action

Micro Precision Calibration, Inc. has established requirements for preventive action in order to eliminate the causes of potential nonconformities in order to prevent their occurrence. Preventive actions are appropriate to the effects of the potential problems and are taken to control change and drive improvement within the company. Documented procedures define the responsibilities and requirements for:

- Initiating preventive actions and application of controls to ensure they are effective;
- Determining potential non-conformities and their causes;
- Evaluating the need for action to prevent occurrence of nonconformities;
- Determining and implementing action needed;
- **Monitoring the results to ensure the preventive actions taken have been effective**

- Maintaining records of results of actions taken and reviewing preventive action taken.

Improvement actions include a review of similar processes or products that could be affected by the identified problem(s). Needed improvements and potential sources of nonconformances, either technical or concerning the Quality Management System, are identified.

Management throughout Micro Precision Calibration, Inc. proactively plans to eliminate the effects of loss to the organization by systematically reviewing historical data for trends and potential impact to the performance of the organization. Specific preventive action plans are developed, implemented and monitored, and reviewed by senior and Executive management for effectiveness in improvement plans

Document Revision Control History

Rev	Issue Date	Revision By	Revision Description
1	1/10/98	QM-540-94	Revised to incorporate ANSI/NCSL Z540, ISO/IEC Guide 25, and ISO 10012 requirements; add Appendices
1a	9/1/98	QM-540-94	Revised Appendix E, cross-reference to procedures, consistent with Rev. C issue of Operations Manual.
1b	11/15/98	QM-540-94	Added A2LA specific criteria for on-site (Mobile Units), Revised sections 3.0, 5.0, 12.0, 14.0, 18.0, 19.0, 20.0, 21.0, 24.0, and Appendix A (ISO/IEC Guide 25)
1c	1/25/99	QM-540-94	Revised Sections 1, 3-18, Appendices A-E. Deleted references to Engineering Manager position; reassigned corrective action and technical responsibilities to Division level.
1d	2/01/01	QM-540-94	Issued Amendment to Quality Manual for A2LA Accredited Lab Transition to ISO/IEC 17025 (Grass Valley Division).
1e	10/26/01	QM-540-94	Updated manual for ISO/IEC 17025 requirements, addition of Mexico division, and incorporated Amendment issued 2/01/01.
2	7/26/03	B. Charles	Complete rewrite of the Quality Manual for realignment and compliance with ISO 9001-2000
3	9/16/03	B. Charles	Change vendor to supplier on page 7; remove reference to Operations Manual and change to Calibration System Description and referenced Appendices on page 9.
4	04/19/06	B. Dean	Updated manual for Revision 2 ISO/IEC 17025:2005
5	09/05/06	B. Dean	Updated Manual to include Philippines Division
5a	09/11/06	B. Dean	Changed scope wording to reflect engineering and repairs.
5b	06/15/07	B. Dean	Updated Corporate locations to reflect Oregon and Thailand laboratories.
5c	07/20/07	B. Dean	Correction of typo on page 2
5d	06/30/09	B. Dean	Specify Mexico Site locations and state MPC site on Vietnam, China, Malaysia and Qatar on page 3
5e	09/16/09	B. Dean	Revise all ISO9001:2000 into ISO9001:2008 Added note for definition of outsourced process on clause 4 QMS page 10 Revised "product quality" to "conformity to product requirements" on clause 6 Resource Management Human page 16



Rev	Issue Date	Revision By	Revision Description
			Revised Control of monitoring and measuring "devices" into "equipment" Added "Identified to determine its calibration status" on Control of monitoring and measuring devices page 25 Added note for method for monitoring customer perception on Customer Satisfaction page 26 Added "establishing records" and maintenance of records and "results" on Internal Audit page 26 Added "Monitoring results to ensure preventive actions taken have been effective" on Preventive action page 29 Revised QMS process-based model align with ISO9001 standard

Micro Precision Calibration, Inc.

Approved

By: _____ s/Jerry Trammell _____ Date: 09/16/09
Jerry Trammell, President

Issued

By: _____ s/Brenda Dean _____ Date: 09/16/09
Brenda Dean, Director of Quality Assurance

The originals of the approval signatures for this manual are on file with the Quality Assurance Manager.

Cross-Reference: ISO 9001:2008 and MPC QMS Documents

ISO 9001:2008	Clause	Supporting MPC Quality System Documents
QSM System	4	
General Requirements	4.1	CSD – Appendix 14 (Table 2 – Quality Policies and Objectives) CSD – Quality Management System Process Map CSD – Cross-Functional Process Map
Documentation requirements	4.2	MPC-QM – Quality Manual
General	4.2.1	CSD – Appendix 14 (Table 2 – Quality Policies and Objectives) CSD – Quality Management System Process Map Quality Plans
Quality Manual	4.2.2	MPC-QM – Quality Manual
Control of documents	4.2.3	MPC-QM – Quality Manual CSD, Appendix 15 – Control of Documents CSD, Appendix 7 – Permitting Departures CSD, Appendix 3 – Field Service Guidelines
Control of records	4.2.4	MPC-QM – Quality Manual MPC-CSD, Appendix 16 – Control of Records
Management responsibility	5	
Management commitment	5.1	CSD, Appendix 14 – Management Responsibilities and Continual Improvement (Table 3 – Management Review; Table 2 – Quality Policies and Objectives) CSD – Quality Management System Process Map
Customer Focus	5.2	MPC-QM – Quality Manual CSD – Customer Satisfaction Process Map
Quality Policy	5.3	MPC-QM – Quality Manual CSD, Appendix 14 – Management Responsibilities and Continual Improvement (Table 3 – Management Review; Table 2 – Quality Policies and Objectives) CSD – Quality Management System Process Map
Planning	5.4	
Quality Objectives	5.4.1	MPC-QM – Quality Manual CSD, Appendix 14 – Management Responsibilities and Continual Improvement (Table 2 – Quality Policies and Objectives) CSD – Management Responsibility Process Map
Quality management system	5.4.2	CSD, Appendix 14 – Management Responsibilities and

ISO 9001:2008	Clause	Supporting MPC Quality System Documents
planning		Continual Improvement (Table 5 – Quality Plans) CSD – Quality Management System Process Map MPC-QM – Quality Manual
Responsibility and authority and communication	5.5	
Responsibility and authority	5.5.1	MPC-QM – Quality Manual CSD, Appendix 2 – Authorized Signatories CSD, Appendix 14 – Management Responsibilities and Continual Improvement (Table 5 – Quality Plans) Authorized Signatories List Job Descriptions (where appropriate/applicable)
Management representative	5.5.2	MPC-QM – Quality Manual Appendix 14, Management Responsibilities and Continual Improvement (Table 1 – Responsibilities)
Internal Communication	5.5.3	MPC-QM – Quality Manual
Management review	5.6	
General	5.6.1	CSD, Appendix 14 – Management Responsibilities and Continual Improvement (Table 3 – Management Review) CSD – Management Review Process Map
Review input	5.6.2	CSD, Appendix 14 – Management Responsibilities and Continual Improvement (Table 3 – Management Review; Table 4 – Items to Be Reviewed During Management Review) CSD – Management Review Process Map
Review output	5.6.3	CSD, Appendix 14 – Management Responsibilities and Continual Improvement (Table 3 – Management Review) CSD – Management Review Process Map
Resource management	6	
Provision of resources	6.1	CSD, Appendix 14 – Management Responsibilities and Continual Improvement (Table 3 – Management Review) CSD – Quality Management System Process Map CSD – Management Review Process Map
Human Resources	6.2	
General	6.2.1	MPC-QM – Quality Manual CSD, Appendix 1 – Minimum Training Requirements CSD, Appendix 14 – Management Responsibilities and Continual Improvement (Table 3 – Management Review) MPC-CSD, Calibration System Description Personnel Training Records
Competence, awareness and	6.2.2	CSD, Appendix 1 – Minimum Training Requirements

ISO 9001:2008	Clause	Supporting MPC Quality System Documents
training		CSD – Training Process Map
Infrastructure	6.3	MPC-QM – Quality Manual MPC-CSD – Calibration System Description
Work environment	6.4	MPC-QM – Quality Manual CSD, Appendix 5 – Environment Controls
Product realization	7	
Planning of product realization	7.1	MPC-CSD, Calibration System Description CSD, Appendix 2 – Accredited Work CSD, Appendix 3 – Field Service Guidelines CSD, Appendix 5 – Environmental Controls CSD, Appendix 6 – Calibration Procedures CSD, Appendix 7 – Permitting Departures CSD, Appendix 8 – Instruments, Cleaning and Prep CSD, Appendix 12 – Control of Instruments and Equipment CSD, Appendix 13 – Calibration Servicing Process CSD, Appendix 14 – Management Responsibilities and Continual Improvement (Table 5 – Quality Plans) Records (e.g., Quality Plans, Management Review Minutes, etc.)
Customer-related processes	7.2	
Determination of requirements related to the product	7.2.1	MPC-QM, Quality Manual CSD, Appendix 11 – Order Processing MPC-CSD, Calibration System Description CSD – Quote Process Map
Review of requirements related to the product	7.2.2	MPC-QM, Quality Manual CSD, Appendix 11 – Order Processing Records (e.g., Contract Review, Service Request, etc.) CSD – Quote Process Map
Customer communication	7.2.3	MPC-QM, Quality Manual CSD, Appendix 11 – Order Processing
Design and development	7.3	
Design and development planning	7.3.1	MPC-QM – Quality Manual MPC-CSD, Calibration System Description CSD, Appendix 6 – Calibration Procedures CSD, Appendix 3 – Field Service Guidelines Records (e.g., Quality Plans, Management Review Minutes, etc.)
Design and development inputs	7.3.2	MPC-QM – Quality Manual MPC-CSD, Calibration System Description CSD, Appendix 3 – Field Service Guidelines Records (e.g., Sales and Marketing, Contract Review and

ISO 9001:2008	Clause	Supporting MPC Quality System Documents
		related records, Environmental records, etc.) ISO/IEC 17025 and ISO 9001-2000 standards
Design and development outputs	7.3.3	MPC-QM – Quality Manual MPC-CSD, Calibration System Description CSD, Appendix 3 – Field Service Guidelines
Design and development review	7.3.4	MPC-QM – Quality Manual MPC-CSD, Calibration System Description CSD, Appendix 3 – Field Service Guidelines
Design and development verification	7.3.5	MPC-QM – Quality Manual MPC-CSD, Calibration System Description CSD, Appendix 3 – Field Service Guidelines CSD, Appendix 13, Calibration Servicing Process (Table 8 – Final Inspection) CSD – Final Inspection Process Map
Design and development validation	7.3.6	MPC-QM – Quality Manual MPC-CSD, Calibration System Description CSD, Appendix 3 – Field Service Guidelines CSD, Appendix 12 – Control of Instruments and Equipment (Table 2 – MPC Major Instrumentation, Table 3 MPC Instrument Control, Table 4 – Customer Equipment Control) CSD, Appendix 13, Calibration Servicing Process (Table 5 – Calibrating and Servicing MPC Instruments; Table 6 – Calibrating and Servicing Customer Equipment; and Table 8 – Final Inspection) CSD – Overview of Calibration Servicing Process Map
Control of design and development changes	7.3.7	MPC-CSD, Calibration System Description CSD, Appendix 3 – Field Service Guidelines
Purchasing Purchasing process	7.4 7.4.1	MPC-QM – Quality Manual CSD, Appendix 10 – Procurement and Subcontractor Control CSD – Procurement Process Map CSD – Subcontractor Process Map Approved Traceability Suppliers List and Records
Purchasing information	7.4.2	MPC-QM – Quality Manual CSD, Appendix 10 – Procurement and Subcontractor Control CSD – Procurement Process Map
Verification of purchased product	7.4.3	CSD, Appendix 10 – Procurement and Subcontractor Control CSD, Appendix 13 – Calibration Servicing Process (Table 3 – Receiving Inspection Process and Table 7 – Calibration Report Requirements)

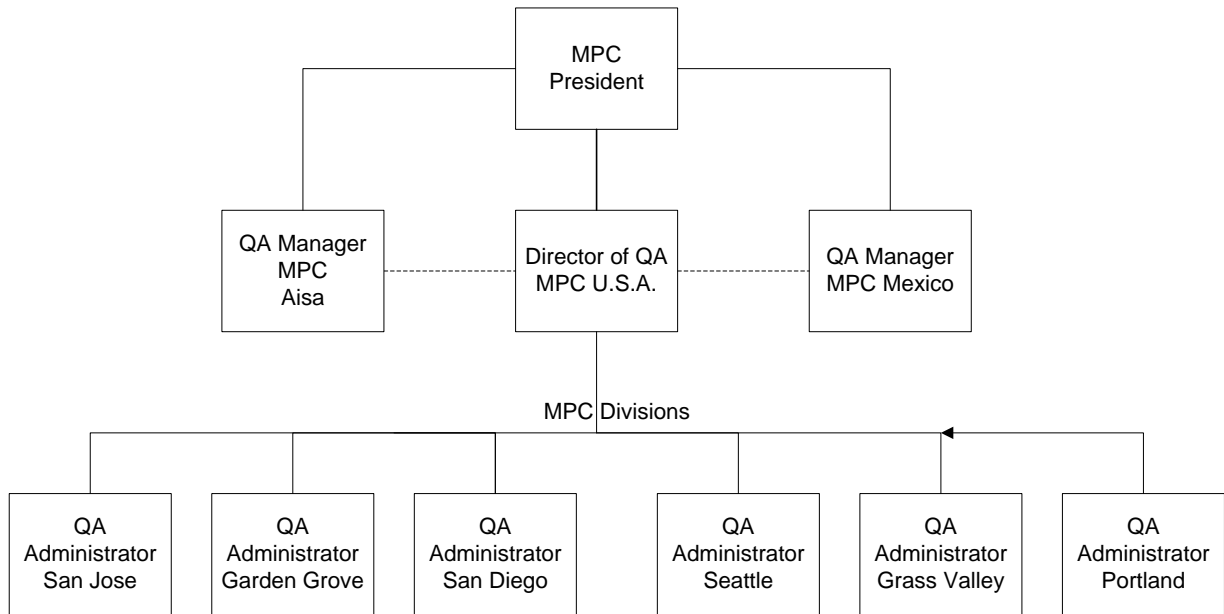
ISO 9001:2008	Clause	Supporting MPC Quality System Documents
		CSD – Procurement Process Map CSD – Receiving Inspection Process Map Records
Production and service provision Control of production and service provision	7.5 7.5.1	MPC-QM – Quality Manual CSD, Appendix 2, Accredited Work CSD, Appendix 9 – Handling, Storage and Transport CSD, Appendix 13 – Calibration Servicing Process (Table 3 – Receiving Inspection Process; Table 4 – Traveler and Equipment Turn-Around) MPC-CSD and Work Instructions (as applicable) Calibration Procedures (Externally and Internally Developed) CSD – Receiving Inspection Process Map CSD – In-Process Inspection Servicing Map CSD – Final Inspection Process Map Records (e.g., test equipment service records, database records, travelers, etc.)
Validation of processes for production and service provision	7.5.2	MPC-QM – Quality Manual CSD, Appendix 1 – Minimum Training Requirements CSD, Appendix 12 – Control of Instruments and Equipment (Table 2 – MPC Major Instrumentation; Table 3 – MPC Instrument Control; Table 4 – Customer Equipment Control) CSD – Measurement Uncertainty Process Map CSD – Interlaboratory Comparisons Process Map CSD – MPC Standards Process Map Records (e.g., Interlaboratory Comparisons, Proficiency Testing, Training Records, etc.)
Identification and traceability	7.5.3	MPC-QM – Quality Manual CSD, Appendix 13 – Calibration Servicing Process (Table 3 – Receiving Inspection Process; Table 4 – Traveler and Equipment Turn-Around; and Table 8 – Final Inspection) CSD, Appendix 12 – Control of Instruments and Equipment (Table 2 – MPC Major Instrumentation; Table 3 – MPC Instrument Control; Table 4 – Customer Equipment Control; and Table 5 – Status Labeling) CSD – Receiving Inspection Process Map CSD – Final Inspection Process Map CSD – MPC Standards Process Map Records (e.g., Status Labeling, Traveler Records, etc.)
Customer property	7.5.4	MPC-QM – Quality Manual CSD, Appendix 9 – Handling, Storage and Transport CSD, Appendix 12 – Control of Instruments and Equipment (Table 4 – Customer Equipment Control)

ISO 9001:2008	Clause	Supporting MPC Quality System Documents
		CSD, Appendix 13 – Calibration Servicing Process (Table 3 – Receiving Inspection Process; Table 6 – Calibrating and Servicing Customer Equipment) CSD, Appendix 15 – Control of Documents (Table 4 – Documents of External Origin) CSD – Overview of Calibration Servicing Process Map
Preservation of product	7.5.5	MPC-QM – Quality Manual CSD, Appendix 9 – Handling, Storage and Transport CSD, Appendix 3 – Field Service Guidelines
Control of monitoring and measuring devices	7.6	MPC-QM – Quality Manual MPC-CSD, Calibration System Description CSD, Appendix 12 – Control of Instruments and Equipment (Table 2 – MPC Major Instrumentation; Table 3 – MPC Instrument Control) CSD – MPC Standards Process Map
Measurement, analysis and improvement	8	
General	8.1	CSD, Appendix 14 – Management Responsibilities and Continual Improvement (Table 5 – Quality Plans) CSD – Quality Management System Process Map Records (e.g., Quality Plans, Statistical Techniques, etc.)
Monitoring and measurement: Customer Satisfaction	8.2 8.2.1	MPC-QM – Quality Manual CSD, Appendix 14 – Management Responsibilities and Continual Improvement CSD – Customer Satisfaction Process Map Records (e.g., Surveys, Statistical Techniques, etc.)
Internal Audit	8.2.2	CSD, Appendix 14 – Management Responsibilities and Continual Improvement CSD, Appendix 17 – Internal Audit CSD – Internal Audit Process Map
Monitoring and measurement of processes	8.2.3	CSD, Appendix 14 – Management Responsibilities and Continual Improvement CSD, Appendix 17 – Internal Audit CSD – Internal Audit Process Map CSD – Management Responsibility Process Map (Measurement and Analysis)
Monitoring and measurement of product	8.2.4	CSD, Appendix 14 – Management Responsibilities and Continual Improvement (Table 2 – Quality Policies and Objectives) Records supporting Quality Objectives (Critical Success Factors) (e.g., Trend Charts, Bar Charts, Reports, etc.)
Control of nonconforming product	8.3	MPC-QM – Quality Manual CSD, Appendix 18 – Control of Nonconforming Product

ISO 9001:2008	Clause	Supporting MPC Quality System Documents
		Control of Nonconformances Process Map Records (e.g., CARs, Evaluations, etc.)
Analysis of data	8.4	CSD, Appendix 14 – Management Responsibilities and Continual Improvement Records (e.g., Statistical Measures such as Trend Charts, Bar Charts, Surveys, Reports, etc.)
Improvement Continual improvement	8.5 8.5.1	MPC-QM – Quality Manual MPC-CSD – Calibration System Description CSD, Appendix 14 – Management Responsibilities and Continual Improvement CSD – Management Review Process Map CSD – Process Maps (all illustrate continual improvement) Records (e.g., Management Review Minutes, Quality Plans, Audit Reports, Statistical Quality Tools, CARs, PARs, etc.)
Corrective Action	8.5.2	MPC-QM – Quality Manual MPC-CSD – Calibration System Description CSD, Appendix 19 – Corrective Action Process CSD – Corrective Action Process Map CAR Records
Preventive action	8.5.3	MPC-QM – Quality Manual MPC-CSD – Calibration System Description CSD, Appendix 20 – Preventive Action Process PAP Records CSD – Preventive Action Process Map

MPC Quality Management Organization

Interfaces Between MPC Organizations (Executive and Quality Management)



ISO 9001-2008 QMS Process-based Model

