



ISO 9001:2015 Engineering Design Quality Manual

Selected pages (not a complete manual)

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- ✓ **Quality Manual Selected Pages**
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[CompanyName]

Engineering Design

Quality Manual

**Operating Policies of the
[CompanyName] Quality System**

Version	Version notes
[Date]	Initial issue

Approval Signature and Date: _____

President/ Date

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QUALITY MANUAL

TABLE OF CONTENTS

1. [CompanyName] Quality Management System	1
1.1. Scope	1
1.2. [CompanyName] Quality Policy	1
1.3. Key Elements of the [CompanyName] Quality Management System	1
2. Quality System Management and Responsibilities	6
2.1. Overview	6
2.2. [CompanyName] Quality Policy	6
2.3. Quality Duties, Responsibilities, and Authority	6
2.4. Quality System Performance Measures	9
2.5. Customer Satisfaction Performance Measures	9
2.6. Exceptions	9
3. Project Design Quality Control Plan	10
3.1. Overview	10
3.2. Project Quality Risk Assessment	10
3.3. [CompanyName] Project License and Qualification Requirements	10
3.4. Project Personnel and Qualifications	11
3.5. Project Design Quality Control Plan	12
3.6. Identification of Quality-Controlled Work Tasks	12
3.7. Project Quality Inspection and Test Plan	12
3.8. Project Quality Communications Plan	12
3.9. Project Quality Training Plan	12
3.10. Project Architect, Engineer and Subcontractors	13
3.11. Project Records and Documentation Plan	13
3.12. Project Audit Plan	13
4. Contract Specifications	14
4.1. Overview	14
4.2. Design Input Requirements Review	14
4.3. Contract Technical Specifications	14
4.4. Contract Drawings	14
4.5. Needs and expectations of interested parties	14
4.6. Contract Risk Assessment	14
4.7. Contract Submittals	15
4.8. Customer Submittal Approval	17
4.9. Contract Warranty	17
4.10. Contract Review and Approval	17
5. Design Review and Control	18
5.1. Overview	18
5.2. Design Input Review	18

5.3. Project Design Quality Control Plan	18
5.4. Design Progress Reviews	18
5.5. Design Output Verification and Approval.....	19
6. Project-Specific Quality Standards	20
6.1. Overview.....	20
6.2. Regulatory Codes.....	20
6.3. Industry Quality Standards	20
6.4. Material Specifications	20
6.5. Equipment Specifications	21
6.6. Work Process Specifications.....	21
6.7. Controlled Material Identification and Traceability	21
6.8. Measuring Device Control and Calibration.....	22
6.9. [CompanyName] Quality Standards	22
7. Project Purchasing	23
7.1. Overview.....	23
7.2. Qualification of Outside Organizations and Company Departments	23
7.3. Project Quality Responsibilities of Key Architect, Engineer, and Subcontractor Personnel.....	24
7.4. Purchase Order Requirements	24
7.5. Project Purchase Order Approvals.....	25
8. Process Controls.....	26
8.1. Overview.....	26
8.2. Project Startup and Quality Control Coordination Meeting.....	26
8.3. Preparatory Project Design Quality Assurance/Quality Control Plan Planning	26
8.4. Weekly Quality Planning and Coordination Meetings.....	27
8.5. Process Control Standards.....	27
8.6. Monthly Quality Control Report	29
9. Inspections and Tests	30
9.1. Overview.....	30
9.2. Required Work Task Quality Inspections and Tests.....	30
9.3. Work Task Completion Inspections	30
9.4. Hold Points for Customer Inspection.....	30
9.5. Inspection and Test Status.....	31
9.6. Independent Quality Assurance Inspections	31
9.7. Inspection and Test Records.....	31
9.8. Project Completion and Closeout Inspection	32
10. Nonconformances and Corrective Actions.....	34
10.1. Overview.....	34
10.2. Nonconformances	34
10.3. Corrective Actions	35
11. Preventive Actions	37
11.1. Overview.....	37

11.2. Identify Preventive Actions for Improvement	37
11.3. Train Preventive Actions for Improvement	37
12. Quality System Audits	39
12.1. Overview	39
12.2. Project Quality System Audit	39
12.3. Company-wide Quality System Audit	39
13. Record and Document Controls.....	41
13.1. Overview	41
13.2. Quality System Documents	41
13.3. Document Controls.....	41
13.4. Record Controls	42
14. Appendix.....	44
14.1. Definitions of Terms	44

Selected Pages

CROSS REFERENCES

The [CompanyName] Quality System complies with ANSI/ISO/ASQ Q9001-2015: Quality management systems – Requirements

ISO 9001:2015	[CompanyName] Quality Manual Section
4 Context of the organization	
4.1 Understanding the organization and its context	2 Quality System Management and Responsibilities
4.2 Understanding the needs and expectations of interested parties	4 Contract Specifications 4.5 Needs and expectations of interested parties
4.3 Determining the scope of the quality management system	1 [CompanyName] Quality Management System 1.1 Scope
4.4 Quality management system and its processes	1 [CompanyName] Quality Management System 13.2 Quality System Documents
5 Leadership	
5.1 Leadership and commitment	2.3.1 President: Quality Duties, Responsibilities, and Authority 2.2 [CompanyName] Quality Policy
5.2 Policy	2.2 [CompanyName] Quality Policy
5.3 Organizational roles, responsibilities and authorities	2.3 Quality Duties, Responsibilities, and Authority
6 Planning	
6.1 Actions to address risks and opportunities	3 Project Design Quality Control Plan 3.2 Project Quality Risk Assessment 4 Contract Specifications 4.6 Contract Risk Assessment
6.2 Quality objectives and planning to achieve them	2 Quality System Management and Responsibilities 2.2 [CompanyName] Quality Policy 2.4 Quality System Performance Measures 2.5 Customer Satisfaction Performance Measures 12 Quality System Audits
6.3 Planning of changes	2.3.1 President: Quality Duties, Responsibilities, and Authority 12 Quality System Audits 13.2.2 Quality System Policy and Procedures
7 Support	
7.1 Resources	3 Project Design Quality Control Plan 3.9.1 [CompanyName] Body of Knowledge 3.9.2 Quality Training 7.2 Qualification of Outside Organizations and Company Departments 8 Process Controls 11 Preventive Actions 12 Quality System Audits
7.1.6 Organizational knowledge	3.9.1 [CompanyName] Body of Knowledge
7.2 Competence	3.4.3 Personnel Qualifications
7.3 Awareness	1.2 [CompanyName] Quality Policy 2.3.1 President: Quality Duties, Responsibilities, and Authority 2.3.2 DQC Manager: Quality Duties, Responsibilities, and Authority
7.4 Communication	3.8 Project Quality Communications Plan 3.9 Project Quality Training Plan
7.5 Documented information	13 Record and Document Controls
8 Operation	
8.1 Operational planning and control	4 Contract Specifications 3 Project Design Quality Control Plan 8.5 Process Control Standards 9.2 Required Work Task Quality Inspections and Tests
8.2 Requirements for products and services	2.2 [CompanyName] Quality Policy 4 Contract Specifications 6 Project-Specific Quality Standards

	3.8Project Quality Communications Plan
8.3 Design and development of products and services	5Design Review and Control 5.5.1 Design Risk Analysis
8.4 Control of externally provided processes, products and services	3.10Project Architect, Engineer and Subcontractors 7Project Purchasing 7.2Qualification of Outside Organizations and Company Departments 7.3Project Quality Responsibilities of Key Architect, Engineer, and Subcontractor Personnel 7.4Purchase Order Requirements 7.5Project Purchase Order Approvals
8.5 Production and service provision	4Contract Specifications 4.9Contract Warranty 3Project Design Quality Control Plan 8Process Controls

Selected Pages

3. PROJECT DESIGN QUALITY CONTROL PLAN

3.1. OVERVIEW

After [CompanyName] is awarded a contract to carry out a design project, the President forms a team consisting of a DQC Manager, Design Project Manager, and Design Engineer.

First, the DQC Manager develops a set of project specifications that align project requirements with customer specifications and requirements, regulations, industry standards, product instructions, and [CompanyName] quality standards.

The DQC Manager evaluates personnel, architects, engineers, and subcontractors, materials, and suppliers, and ensures that only those that are capable and qualified are included on the project. Training is provided to ensure that all personnel involved in the project understand their quality responsibilities and authorities.

The DQC Manager then details how the quality is controlled throughout the design process through a quality inspection and test plan that specifies requirements and pass/fail criteria for quality inspections and tests. [CompanyName] operating policies assure compliance to the project specifications.

As the project proceeds and prior to starting each design task, the Design Engineer coordinates detailed requirements and resources, site conditions, and communicates them through a meeting with all interested parties. The task, the Design Engineer amends inspection specific checklists with items for heightened awareness based on the concerns of all parties.

The architects, engineers, and subcontractors and Design Engineer use the quality inspection forms to monitor execution of the design process through a series of quality inspections before, during, and at the completion of each design task. Laboratory and functional tests are performed to assure performance results.

Should nonconformances occur, they are systematically controlled and corrected. Improvements are made to prevent recurrences.

Throughout the project, there are standard operating procedures and forms for creating, maintaining, and controlling quality documents and records.

Throughout the project, the DQC Manager performs on-site quality audits to ensure that the [CompanyName] Quality System is operating effectively.

3.2. PROJECT QUALITY RISK ASSESSMENT

The DQC Manager performs a general assessment and identifies project quality risks that may affect overall project quality. The DQC Manager then prevents or eliminates the risks by integrating specific risk controls into all relevant elements of the project quality control plan.

3.3. [COMPANYNAME] PROJECT LICENSE AND QUALIFICATION REQUIREMENTS

The DQC Manager identifies company license and qualification credentials required by contract specifications and government regulators. The DQC Manager obtains records, certificates, and license records that provide verification of [CompanyName] credentials.

3.3.1. REQUIRED COMPANY LICENSES AND CERTIFICATIONS

The DQC Manager defines quality-related company credentials for each project work task that affects quality.

3.4. PROJECT PERSONNEL AND QUALIFICATIONS

3.4.1. PROJECT ORGANIZATION CHART

The President defines the organization chart for the project. The organizational chart includes job titles, names of assigned personnel, and organizational and administrative interfaces with the customer. The organization chart defines lines of authority as indicated by solid connection; dotted lines indicate lines of communication. The lines of authority preserve independence of quality control personnel from the pressures of production.

When a person with authority is unavailable only a person with higher authority may assume the responsibility of the unavailable person.

The President assesses the qualification requirements for each position on the project organization chart, qualifications of each person, and then appoints only qualified persons to the project organization.

3.4.2. APPOINTMENT OF KEY PROJECT PERSONNEL

The President forms a project management team consisting of:

- A DQC Manager
- A Design Project Manager
- A Design Engineer
- A Safety Manager (if required)

The President appoints qualified persons to each project management job position with specific quality responsibilities and authorities. The President assesses the qualifications of each person before the appointment is made.

The President keeps a record of the appointment and signs the document. The person accepts the appointment by signing a declaration as a competent person.

3.4.3. PERSONNEL QUALIFICATIONS

The DQC Manager qualifies employee capabilities to ensure that they are capable of completely carrying out their assigned quality responsibilities including the following capabilities:

- Knowledge of Company quality standards
- Knowledge of job responsibilities and authority
- Demonstrated skills and knowledge
- Demonstrated ability
- Demonstrated results
- Required training
- Required experience

The DQC Manager also evaluates independent contractor personnel on the same standards that apply to employees.

3.4.4. REQUIRED LICENSES AND CERTIFICATIONS

8. PROCESS CONTROLS

HOW WORK IS CARRIED OUT

8.1. OVERVIEW

The design process plan defines how project work is to be done and approved for the overall project. The design process plan is communicated to all key personnel, architects, engineers, and subcontractors in a startup meeting. As the project proceeds, work task plans provide additional details of how each individual work task is carried out. Work tasks planning meetings are used to communicate expectations of the work task plan to key personnel responsible for carrying out the work task.

8.2. PROJECT STARTUP AND QUALITY CONTROL COORDINATION MEETING

Prior to the commencement of work, the Design Project Manager holds a meeting to discuss and coordinate how project work will be performed and controlled. Key personnel from [CompanyName], architects, engineers, and subcontractors meet to review expectations for project quality results as well as quality assurance and quality control policies and procedures including:

- Key requirements of the project
- The Project Design Quality Control Plan
- Required quality inspections and tests
- The project submittal schedule
- Quality policies and heightened awareness of critical quality requirements
- Project organization chart and job responsibilities
- Methods of communication and contact information
- Location of project documents and records

8.3. PREPARATORY PROJECT DESIGN QUALITY ASSURANCE/QUALITY CONTROL PLAN PLANNING

8.3.1. WORK TASK REQUIREMENTS REVIEW

In preparation for the start of an upcoming work task, the Design Engineer reviews an integrated and coordinated set of documents that collectively define quality requirements for the work task including:

- Objectives and acceptance criteria of the work task
- Quality standards that apply to the work task
- Work instructions, process steps, and product installation instructions that apply to the work task
- Shop drawings
- Submittals
- Tools and equipment necessary to perform the work
- License, certification, or other qualification requirements of personnel assigned to work
- Required records of the process and resulting product
- The subcontractor contracted to perform the work, if applicable
- Customer contract requirements
- Required quality inspections and tests
- Method for clearly marking nonconformances to prevent inadvertent use
- Location of quality system records and documents
- Personnel training

8.3.2. WORK TASK PREPARATORY QUALITY PLANNING MEETINGS

Prior to the start of a work task, the Design Engineer conducts a meeting with key company, subcontractor personnel responsible for carrying out, supervising, or inspecting the work, and interested customer representatives.

During the meeting, the Design Engineer communicates the work task quality requirements and reinforces heightened awareness for critical requirements. Topics for a work task quality plan meeting include:

- Conflicts that need resolution
- Required quality documents and a verification of availability to personnel carrying out, supervising, or inspecting the work task
- Record keeping requirements and the availability of necessary forms
- Review methods and sequences of installation
- Special details and conditions
- Standards of workmanship
- Heightened awareness of critical quality requirements
- Quality risks
- Work tasks quality inspection form

8.4. WEEKLY QUALITY PLANNING AND COORDINATION MEETINGS

The Design Engineer conducts a meeting with key company, architect, engineer, and subcontractor personnel responsible for carrying out, supervising, or inspecting the work, and interested customer representatives.

The meeting is held on a nominal weekly schedule. During the meeting, the Design Engineer facilitates coordination among the participants, communication among the participants, and reinforces heightened awareness for critical requirements.

The Design Engineer maintains a record of the meeting event on the Daily Quality Control Report.

8.5. PROCESS CONTROL STANDARDS

8.5.1. CONTROL OF CUSTOMER PROPERTY

Care will be exercised for customer property used by or under [CompanyName] control. [CompanyName] will identify, inspect, verify, control, and protect customer property with the procedures that apply to company purchased materials. If any customer property is lost, damage, or otherwise found to be unsuitable for use [CompanyName] will report this to the customer.

8.5.2. JOB-READY START WORK STANDARDS

Work on a work task starts only when conditions do not adversely impact quality, comply with government regulations, contract technical specifications, industry standards, or product installation instructions.

The DQC Manager identifies supplemental start-work requirements that apply to a specific project when they are necessary to assure quality results.

8.5.3. WORK IN PROCESS STANDARDS

11. PREVENTIVE ACTIONS

PREVENT NONCONFORMANCES

11.1. OVERVIEW

Fixing problems found during quality inspections is not enough. Systematic prevention of recurrences is essential for improving quality.

[CompanyName] makes changes to solve the problem. Solutions may involve a combination of enhanced process controls, training, upgrade personnel qualifications, improved processes, or use of higher-grade materials.

Follow-up ensures that a problem is completely resolved. If problems remain, the process is repeated.

11.2. IDENTIFY PREVENTIVE ACTIONS FOR IMPROVEMENT

The DQC Manager identifies preventive action improvement priorities with respect to frequency, severity, and detectability of quality correction items found during and after completion of work activities. The DQC Manager also reviews company quality performance and customer feedback.

More specifically, the DQC Manager assesses:

- Customer corrective items
- Design Engineer quality inspection results
- Code official inspection results
- Post-construction service
- Management field reviews
- Annual system review
- Customer satisfaction surveys

The DQC Manager documents quality items requiring preventive action improvement.

The DQC Manager leads the company in finding solutions to address the causes of problems.

When a solution requires changes to [CompanyName] quality standards, the DQC Manager makes modifications as necessary by making changes to:

- Material specifications
- Personnel qualifications
- Architect, Engineer and Subcontractor qualifications
- Company standards
- Inspection processes

11.3. TRAIN PREVENTIVE ACTIONS FOR IMPROVEMENT

The DQC Manager initiates preventive action training to address quality improvement items. Personnel and architects, engineers, and subcontractors performing or inspecting work participate in the training.

Heightened awareness during quality inspections verifies and documents compliance with the preventive action improvement items. A qualified Design Engineer inspects hotspot during regular quality inspections and records observations on the quality inspection form.

13. RECORD AND DOCUMENT CONTROLS

13.1. OVERVIEW

[CompanyName] ensures that quality related documents and records are created, current versions are in use, complete, identifiable, and stored properly.

13.2. QUALITY SYSTEM DOCUMENTS

13.2.1. QUALITY MANUAL

The DQC Manager maintains the [CompanyName] Quality Manual that documents [CompanyName] quality policies. Each policy identifies the titles of personnel responsible.

The DQC Manager ensures that the Quality Manual and documents related to a work task are accessible to personnel performing the work.

The DQC Manager maintains, improves, and updates the manual as necessary. At least annually, the DQC Manager determines if updated versions of standards and product installation instructions are available. If so, the DQC Manager updates the Quality System documentation accordingly.

The President approves revisions to the Quality Manual, then signs and dates the cover.

13.2.2. QUALITY SYSTEM POLICY AND PROCEDURES

The DQC Manager prepares procedures when documented work steps are necessary for establishing, implementing, and maintain the [CompanyName] Quality System. Only procedures approved by the DQC Manager are a requirement of the [CompanyName] Quality System.

Written procedures are required for the use of forms to record quality data.

Each procedure must contain the following elements:

- Purpose
- Scope
- Definitions
- Responsible Person(s)
- References
- Procedure steps: that describe sequential processes to be followed to accomplish quality objectives

13.3. DOCUMENT CONTROLS

The DQC Manager assigns a new version number to each version of quality system documents, including the Quality Manual.

The DQC Manager and President control all company-wide quality system documents including:

- Approval of all quality system documents and for adequacy prior to issue or reissue.
- Ensures that applicable documents are available and usable at points of use
- Prevents unintended use of obsolete documents

The DQC Manager controls project-specific quality system documents including:

- Approval of all project quality documents and for adequacy prior to issue or reissue.

15. FORMS

[CompanyName] Point of Contact List	48
[CompanyName] Project Architect, Engineer, and Subcontractor List.....	49
[CompanyName] Project Quality Communications Plan	50
[CompanyName] Project Submittal Form	52
[CompanyName] Project Submittals Schedule and Log.....	53
[CompanyName] Quality Inspection and Test Plan	54
[CompanyName] Inspection and Test Report	55
[CompanyName] Controlled Materials Form	56
[CompanyName] Material Inspection and Receiving Report.....	57
[CompanyName] Test Equipment Calibration Plan and Log	58
[CompanyName] Quality Controlled Work Task List	59
[CompanyName] Work Task Design Quality Control Plan	60
[CompanyName] Project Startup Meeting Form	61
[CompanyName] Work Task Quality Control Planning Meeting Form.....	62
[CompanyName] Monthly Quality Control Report	63
[CompanyName] Daily Production Report	64
[CompanyName] Project Design Review Plan	65
[CompanyName] Design Review Form.....	66
[CompanyName] Work Task Inspection Form	67
[CompanyName] Punch List.....	68
[CompanyName] Project Completion Inspection Form	69
[CompanyName] Nonconformance Report	70
[CompanyName] Nonconformance Report Control Log	71

[CompanyName] Design Review Form			
Project ID	Project Name	Design Review Ref#	Date
[ProjectNumber]	[ProjectName]		
Review milestone:		Performing Department/Crew/Architect, Engineer, and Subcontractor:	
Reference design documents under review			
Item #	Title or Description	Version / Issue Date	
Review recommendations			
Item#	Recommendation (reference supporting documents)	[CompanyName] Acceptance/ Rejection Signature / Date:	Customer Acceptance/ Rejection Signature / Date:
		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved	<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved <input type="checkbox"/> Approval not required
		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved	<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved <input type="checkbox"/> Approval not required
		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved	<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved <input type="checkbox"/> Approval not required
		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved	<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved <input type="checkbox"/> Approval not required

[CompanyName] Punch List						
Project ID		Project Name		Punch List Type		
[ProjectNumber]		[ProjectName]		<input type="checkbox"/> Work Task: _____ <input type="checkbox"/> Supervisor Punch List <input type="checkbox"/> Pre-Final Customer Inspection <input type="checkbox"/> Final Acceptance Inspection		
Inspection Date		Preparer				
Item	Location	Description	Due Date	Compl. Date	Item Completion Verification	
					Super Initial	QA Initial
Punch List Completion Date		Final QA Sign-off		Remaining Nonconformances Reported ID # and Description		



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