



## **Design Quality Control Plan**

### **Sample** (Selected Pages – Not a Complete Plan)

**Part 1: Project-Specific Design Quality Plan**

**Part 2: Company Quality Manual**

**Part 3: Submittal Forms**

**Contact:**

**First Time Quality**

**410-451-8006**

# PROJECT-SPECIFIC DESIGN QUALITY PLAN

## TABLE OF CONTENTS

<b>Background Information .....</b>	<b>7</b>
Customer .....	7
Project Name .....	7
Project Number .....	7
Project Location.....	7
Overall Project Description.....	7
[CompanyName] Scope of Work .....	7
<b>A. [CompanyName] Quality Policy .....</b>	<b>8</b>
<b>B. Key Elements of the Design Quality Plan.....</b>	<b>9</b>
Project Design Quality Control Plan Overview .....	11
<b>C. Project Quality Coordination and Communication .....</b>	<b>12</b>
<b>D. Project QC Personnel.....</b>	<b>16</b>
Project QC Job Position Assignments .....	16
Project QC Organization Chart .....	17
<b>E. Duties, Responsibilities, and Authority of QC Personnel .....</b>	<b>18</b>
<b>F. Personnel Qualifications .....</b>	<b>24</b>
<b>G. Qualification of Third Party Inspection/Testing Companies and Architects, Engineers, And Subcontractors.....</b>	<b>26</b>
Design Inspection/Testing Laboratory Qualification Requirements.....	26
Qualification .....	26
Purchase Order Approval .....	27
<b>H. Quality Training .....</b>	<b>29</b>
<b>I. Design Project Quality Specifications .....</b>	<b>32</b>
Local Building Codes .....	32
<b>J. Design Review Process.....</b>	<b>34</b>
Design Reviews .....	34
Design Review Plan.....	34
<b>K. Design Inspection and Test Plan.....</b>	<b>38</b>
Calibration of Inspection, Measuring, and Test Equipment .....	38
<b>L. Work Task Quality Inspections .....</b>	<b>40</b>
Identification of Quality Inspected Work Tasks.....	40
Required Inspections For Each Work Task .....	40
<b>M. Control of Corrections and Nonconformances .....</b>	<b>43</b>
Marking of Nonconformances and Observations.....	43

Control the Continuation of Work.....	43
Recording of Nonconformances.....	43
Design QA/QC Manager Disposition of Nonconformance Reports.....	44
Corrective Actions .....	44
Nonconformance Preventive Actions.....	45
<b>N. Project Completion Inspections.....</b>	<b>47</b>
Punch-Out QC Inspection .....	47
Pre-Final Customer Inspection .....	47
Final Acceptance Customer Inspection .....	48
<b>O. Project Quality Records and Documents.....</b>	<b>51</b>
<b>P. Quality Assurance Surveillance .....</b>	<b>54</b>
Project Quality Performance Surveillance.....	54
Project Quality Audits.....	54
Project Audit Plan.....	55
Project Audit Requirements .....	55
<b>Q. Additional Quality Control Requirements.....</b>	<b>57</b>

Selected Pages

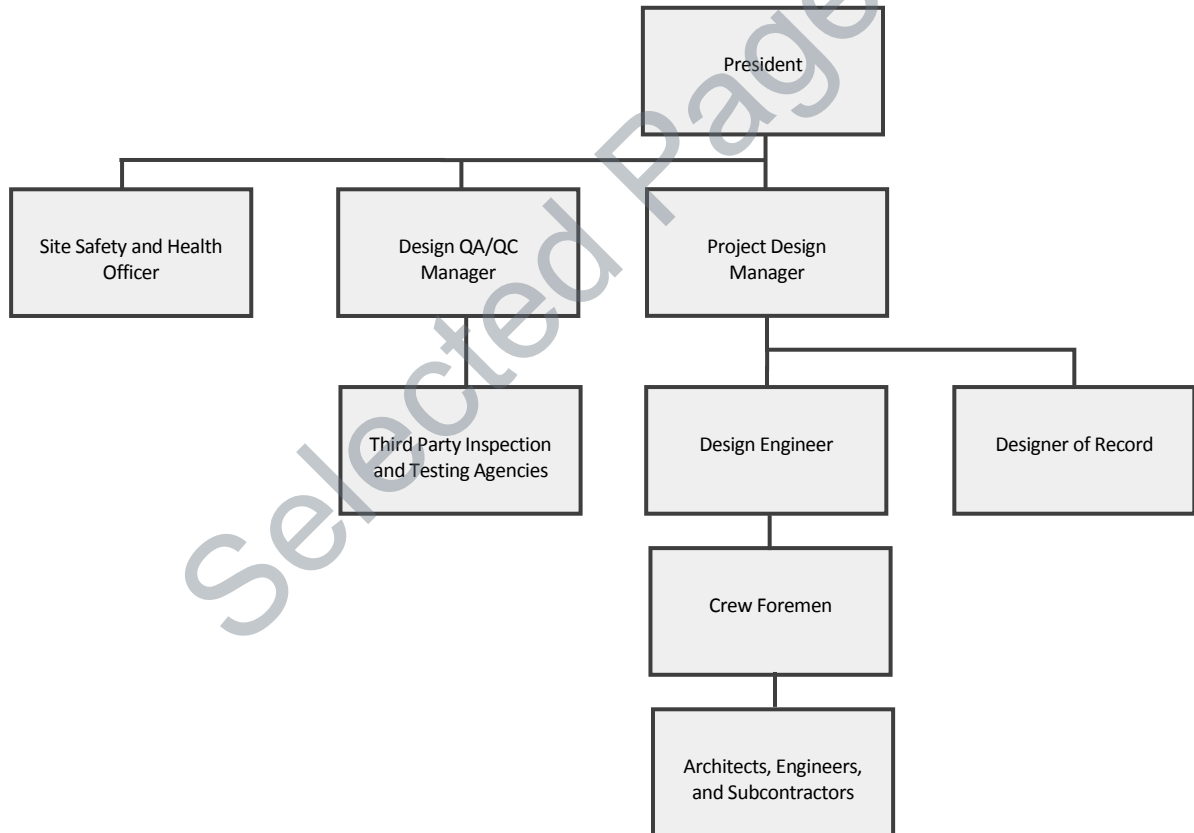
## PROJECT QC ORGANIZATION CHART

The Project QC Organization Chart shows the QC organizational structure. The chart includes job positions along with the name of each person appointed to that position. Figure C-1 shows the QC Organization Chart for this project.

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.

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.

Figure C-1



## I. DESIGN PROJECT QUALITY SPECIFICATIONS

Fulfilling customer contract expectations is a primary objective of the [CompanyName] Quality System. To ensure that customer expectations will be fulfilled, [CompanyName] clearly defines the requirements for each contract before it is approved.

The Project Design Manager ensures that the information in customer contracts clearly defines customer expectations and that the necessary details are provided to set requirements for design.

[CompanyName] personnel and architects, engineers, and subcontractors are accountable for compliance to standards-based written specifications.

To achieve expectations reliably and consistently, specifications are clearly spelled out, not only for results but also for processes. Specifications apply to materials, work steps, qualified personnel and architects, engineers, and subcontractors, safe work rules, and environmental work conditions.

Standards ensure that materials, methods, and results are specified rather than left to discretionary practices.

All [CompanyName] design activities comply with generally accepted good workmanship practices and industry standards.

Selected Pages

## J. DESIGN REVIEW PROCESS

Design controls are in place to assure the quality of design designs for this project.

A design plan is used to document the design control process. The Design Plan is included as an exhibit in this subsection.

Intermediate reviews will be carried out as indicated on the design control plan. The last review is the design output review.

A record of all reviews will be recorded on the Design Review form. A Design Review form exhibit is included in this subsection.

The President has appointed [DesignerRecordName] as the Designer of Record. [DesignerRecordName] will control the design process with specific quality responsibilities, duties, and the authority to carry them out.

### DESIGN REVIEWS

The Design QA/QC Manager holds review meetings with interested parties at key design milestones. The Design QA/QC Manager identifies the key design milestones, the design output required for the review, and a list of reviewers.

Two design reviews are required: one is an input design review and the other is the final design review. The Design QA/QC Manager identifies other design reviews necessary to ensure a quality result. Design reviews may be specified at the completion of design work tasks, site assessments, preliminary engineering, preliminary design, percentage completion stages, and on a calendar schedule.

The Design QA/QC Manager identifies customer and company reviewers appropriate for each design milestone. Reviewers may include persons that have a stake in any of the following: quality, safety, constructability, scheduling, maintenance, purchasing, estimating, or cost control.

At each review, the Design QA/QC Manager reviews reviewer recommendations for amendments to the design specifications. The Design QA/QC Manager submits selected design amendments for customer approval. Customer approved design amendments are design requirements.

<b>[CompanyName][CompanySuffix]</b> <b>Project Design Review Plan</b> <small>Version December 12, 2012</small>					
Project ID		Project Name		Preparer	Date
[ProjectNumber]		[ProjectName]			
<b>Design Appointments</b>					
Designer of Record					
Designer(s)					
Design QC Reviewer					
<b>Design Review Milestones</b>					
	Ref#	Work Task	Output required for review	Scheduled date/milestone	Review participants
Design Input Review					
Work in Process Review:					
Work in Process Review:					
Final Design Review:					

## N. PROJECT COMPLETION INSPECTIONS

[CompanyName] conducts a series of inspections near the end of each project to assure that the contracted work is completed to specifications.

Near the end of the project, or a milestone, the Design QA/QC Manager, Design Engineer, and Project Design Manager participate in the inspection of the completed project and verify conformance to contract specifications. Any deviations are corrected and reinspected before submitting the project to the customer for final inspection.

If the customer performs a final inspection, corrections are quickly addressed, reinspected by the Quality Manager, and then submitted for customer final review.

A Record of each of the inspections will be maintained on the Project Completion Inspection form. If punch items are discovered during the inspection, a record of the punch items and their correction will be maintained on the Punch List form. Project Completion Inspection and Punch List form exhibits are included as an exhibit in this subsection.

### PUNCH-OUT QC INSPECTION

Near the end of the project, or a milestone established in the Project Quality Inspection and Test Plan, the Design QA/QC Manager will inspect the completed project and verify conformance to contract specifications.

The Design QA/QC Manager records nonconforming items.

The Design Engineer assigns a planned date by which the deficiencies will be corrected. The date may be assigned for all items or individual items as necessary. After corrections have been made, the Design Engineer verifies the completion of each item.

Then the Design QA/QC Manager conducts a follow-up inspection and verifies that all nonconforming items have been corrected to meet contract specifications. Any remaining deficiencies are recorded managed as nonconformances.

When the pre-final [CompanyName] inspection process is complete, the Design QA/QC Manager then notifies the customer that the project is ready for the customer's final inspection. The customer is also notified of any remaining nonconformances and their planned resolution.

### PRE-FINAL CUSTOMER INSPECTION

If the customer performs a pre-final inspection, the Design QA/QC Manager records nonconforming items and assigns a planned date by which the deficiencies will be corrected.

The Design Engineer assigns a planned date by which the deficiencies will be corrected. The date may be assigned for all items or individual items as necessary. After corrections have been made, the Design Engineer verifies the completion of each item.

After corrections have been made, the Design QA/QC Manager will conduct a follow-up inspection and verify that all nonconforming items have been corrected to meet contract specifications. Any remaining deficiencies are recorded and then managed as nonconformances.



# QUALITY MANUAL

## TABLE OF CONTENTS

<b>1. Quality System Management and Responsibilities.....</b>	<b>5</b>
1.1. Overview.....	5
1.2. [CompanyName][CompanySuffix] Quality Policy .....	5
1.3. Quality Duties, Responsibilities, and Authority .....	5
1.4. Quality System Performance Measures .....	8
1.5. Customer Satisfaction Performance Measures .....	8
1.6. Exceptions.....	8
<b>2. Project Design Quality Control Plan .....</b>	<b>9</b>
2.1. Overview.....	9
2.2. [CompanyName] Project License and Qualification Requirements .....	9
2.3. Project Personnel and Qualifications .....	9
2.4. Project Design Quality Control Plan .....	10
2.5. Identification of Quality Controlled Work Tasks.....	11
2.6. Project Quality Inspection and Test Plan.....	11
2.7. Project Quality Communications Plan .....	11
2.8. Project Quality Training Plan .....	11
2.9. Project Records and Documentation Plan.....	11
2.10. Project Audit Plan .....	12
<b>3. Contract Specifications.....</b>	<b>13</b>
3.1. Overview.....	13
3.2. Design Input Requirements Review .....	13
3.3. Contract Submittals .....	13
3.4. Customer Submittal Approval .....	14
3.5. Contract Review and Approval .....	15
<b>4. Design Review and Control .....</b>	<b>16</b>
4.1. Overview.....	16
4.2. Design Progress Reviews .....	16
4.3. Design Output Verification and Approval.....	16
<b>5. Project-Specific Quality Standards .....</b>	<b>17</b>
5.1. Overview.....	17
5.2. Regulatory Codes.....	17
5.3. Industry Quality Standards .....	17
5.4. [CompanyName] Quality Standards .....	17
<b>6. Project Purchasing .....</b>	<b>19</b>
6.1. Overview.....	19

6.2. Qualification of Outside Organizations and Company Departments .....	19
6.3. Project Architect, Engineer, And Subcontractor List .....	20
6.4. Purchase Order Requirements .....	20
6.5. Project Purchase Order Approvals.....	21
<b>7. Process Controls.....</b>	<b>22</b>
7.1. Overview.....	22
7.2. Project Startup and Quality Control Coordination Meeting .....	22
7.3. Weekly Quality Planning and Coordination Meetings.....	22
7.4. Monthly Quality Control Report .....	22
<b>8. Inspections and Tests .....</b>	<b>24</b>
8.1. Overview.....	24
8.2. Required Work Task Quality Inspections and Tests.....	24
8.3. Work Task Completion Inspections .....	24
8.4. Hold Points for Customer Inspection.....	24
8.5. Inspection and Test Status.....	25
8.6. Independent Quality Assurance Inspections .....	25
8.7. Inspection and Test Records.....	25
8.8. Project Completion and Closeout Inspection .....	26
<b>9. Nonconformances and Corrective Actions .....</b>	<b>28</b>
9.1. Overview.....	28
9.2. Nonconformances .....	28
9.3. Corrective Actions .....	29
<b>10. Preventive Actions .....</b>	<b>30</b>
10.1. Overview.....	30
10.2. Identify Preventive Actions for Improvement .....	30
10.3. Train Preventive Actions for Improvement .....	30
<b>11. Quality System Audits .....</b>	<b>32</b>
11.1. Overview.....	32
11.2. Project Quality System Audit.....	32
11.3. Company-wide Quality System Audit .....	32
<b>12. Record and Document Controls.....</b>	<b>33</b>
12.1. Overview.....	33
12.2. Quality System Documents .....	33
12.3. Document Controls.....	33
12.4. Record Controls .....	34
<b>13. Appendix.....</b>	<b>36</b>
13.1. Definitions of Terms .....	36

## 7. PROCESS CONTROLS

### *HOW WORK IS CARRIED OUT*

#### 7.1. 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.

#### 7.2. PROJECT STARTUP AND QUALITY CONTROL COORDINATION MEETING

Prior to the commencement of work, the Project Design 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

#### 7.3. 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.

#### 7.4. MONTHLY QUALITY CONTROL REPORT

When a monthly quality control report is required by the Project Quality Plan, the Design Engineer records a monthly status report. The report includes:

## List of Included Forms

- Project Personnel Qualification Form
- Subcontractor or Supplier Qualification Form
- DQC Manager Appointment Letter
- Project Design Manager Appointment Letter
- Design Engineer Appointment Letter
- Laboratory Qualification Form
- Quality Inspection and Test Plan
- Nonconformance Report
- Project Design Process Plan
- Design Review Form
- Quality Controlled Work Task List
- Work Task Inspection Form
- Punch List
- Project Completion Inspection Form
- Training Plan
- Training Log
- Project License and Qualifications
- Personnel Certifications and Licenses
- Project Organization Chart
- Project Quality Communications Plan
- Subcontractor Quality Communications Plan
- Point Of Contact List
- Project Quality Training Plan
- Project Quality Records Plan
- Project Submittals Schedule and Log
- Project Submittal Form
- Change Order Form
- Design Review Meeting Participant Form
- Project Regulatory Building Codes
- Controlled Materials Form
- Material Inspection and Receiving Report
- Test Equipment Calibration Plan and Log

- Subcontractor and Supplier Certifications and Licenses
  - Subcontractor Quality Control Policy Requirements
  - Project Startup Meeting Form
  - Work Task Design Quality Control Plan
  - Work Task Quality Control Planning Meeting Form
  - Daily Production Report
  - Monthly Quality Control Report
- 
- Inspection and Test Report
  - Nonconformance Report Control Log
  - Corrective Action Report
  - Training Record
  - Jobsite Quality Review Planning and Log Sheet
  - Quality System Audit Form
  - System Document Control Form
  - Project Records Control Form

Selected Pages

<b>[CompanyName][CompanySuffix]</b> <b>Nonconformance Report</b> <small>Version December 12, 2012</small>		
Nonconformance Report Control ID	Project ID	Project Name
	[ProjectNumber]	[ProjectName]
Preparer Signature/ Submit Date		Design QA/QC Manager Signature / Disposition Date
Description of the requirement or specification		
Description of the nonconformance, location, affected area, and marking		
Disposition	<input type="checkbox"/> Replace <input type="checkbox"/> Repair <input type="checkbox"/> Rework <input type="checkbox"/> Use As-is	
	Approval of disposition required by customer representative? Yes <input type="checkbox"/> No <input type="checkbox"/> Customer approval signature /date: _____	
Corrective Actions	<input type="checkbox"/> Corrective actions completed Name/Date: _____ Customer acceptance of corrective actions required? Yes <input type="checkbox"/> No <input type="checkbox"/> Name/Date: _____	
Preventive Actions		
	<input type="checkbox"/> Preventive actions completed Name/Date: _____	



For More Information:

Contact: Ed Caldeira

410-451-8006

[www.firsttimequality.com](http://www.firsttimequality.com)

[EdC@FirstTimeQuality.com](mailto:EdC@FirstTimeQuality.com)

For More Information, contact: Ed Caldeira • Caldeira Quality, LLC • First Time Quality<sup>SM</sup>

410-451-8006 • [www.firsttimequality.com](http://www.firsttimequality.com) • [EdC@FirstTimeQuality.com](mailto:EdC@FirstTimeQuality.com)