

Engineering Design Comprehensive Quality Plan & Manual Sample

Selected pages (not a complete plan or manual)
Sample includes:

- **✓** Project Quality Plan Pages
- **✓** Quality Manual Pages
- **✓** Standard Forms Examples
- ✓ Additional QA/QC Forms Examples

Contact:

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[CompanyName]

Engineering Design Quality Control Plan

[ProjectName] [ProjectNumber]

Effective Date [Date]

Version	Version notes
[Date]	Initial issue
Аррі	roved
[DesignQCManager	Name], DQC Manager

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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 DQC Manager holds review meetings with interested parties at key design milestones. The DQC 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 DQC 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 DQC 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 DQC Manager reviews reviewer recommendations for amendments to the design specifications. The DQC Manager submits selected design amendments for customer approval. Customer approved design amendments are design requirements.

DESIGN OUTPUT REVIEWS

The DQC Manager ensures that design output documents are verified by qualified personnel independent of the person performing the work. The person responsible must verify:

- The completed design meets requirements specified by the design input
- The completed design meets approved design amendments
- Engineering calculations are correct
- Completeness of records per the Design Project Design Quality Control Plan including inputs, reviews, communications, and verification activities.

[CompanyName] Project Design Review Plan							
Project ID	Project ID Project Name Preparer Date					Date	
[ProjectNumber]		[ProjectName]					
			Design App	oointments	C		
Designer of Record					0,0		
Designer(s)							
Design QC Reviewer				00			
		Des	sign Revie	w Milestones			
	Ref#	Work Task	Outpu	ut required for review	Scheduled date/	milestone	Review participants
Design Input Review			0				
Work in Process Review:							
Work in Process Review:		10					
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 DQC 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 DQC Manager will inspect the completed project and verify conformance to contract specifications.

The DQC 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 DQC Manager conducts a follow-up inspection and verifies that all nonconforming items have been corrected to meet contract specifications. Any remaining deficiencies are recorded and managed as nonconformances.

When the pre-final [CompanyName] inspection process is complete, the DQC Manager than 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 DQC 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 DQC 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.

[CompanyName] Punch List						
P	roject ID	Project Name		Pun	ich List Type	
[ProjectNu	ımber]	[ProjectName]	☐Work Tas	ks		
Insp	ection Date	Preparer	Project F			
				Customer Inspe		
						mpletion ication
Item	Location	Description	Due Date	Compl. Date	Super Initial	QA Initial
			06			
			<u>}</u>			
		180				
	unch List pletion Date	Final QA Sign-off	Rema		conformances nd Description	

[CompanyName]

Quality Manual

Operating Policies of the [CompanyName] Quality System

Effective Date [Date]

	Version	XC	Version notes
[Date]			Initial issue
	10		

Approval Signature and Date:

President/ Date

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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:

- A summary of work completed and work in progress
- Outstanding issues
- Issues resolved during the reporting period
- Outstanding potential change orders
- Project status with current project costs and estimated completion date

9. Nonconformances and Corrective Actions

9.1. OVERVIEW

Should a nonconformance be identified by an inspection there is a systematic method to control the item, correct it, and ensure that project quality is not adversely impacted by the event.

A nonconformance is any item that does not meet project specifications or [CompanyName] Quality System requirements.

9.2. Nonconformances

9.2.1. MARKING OF NONCONFORMANCES AND OBSERVATIONS

When the DQC Manager, Design Engineer, inspector, or customer identifies a nonconformance or an observation, the item is quickly and clearly marked by tape, tag, or other easily observable signal to prevent inadvertent cover-up.

9.2.2. CONTROL THE CONTINUATION OF WORK

After the item is marked, the Design Engineer determines if work can continue in the affected area:

CONTINUE WORK: When continuing work does not adversely affect quality or hide the defect, work may continue in the affected area while the disposition of the item is resolved. The Design Engineer may place limitations on the continuation of work.

STOP WORK ORDER: When continuing work can adversely affect quality or hide the defect, work must stop in the affected area until the disposition of the item resolved. The Design Engineer identifies the limits of the affected area. The Design Engineer quickly and clearly identifies the boundaries of the stop work area.

9.2.3. NONCONFORMANCE REPORT

9.2.3.1. RECORDING OF NONCONFORMANCES

If nonconformances or observed items exist by the work task completion inspection, the Design Engineer or inspector records the nonconformances on a nonconformance report.

The Design Engineer sends the nonconformance report to the DQC Manager.

9.2.3.2. DQC MANAGER DISPOSITION OF NONCONFORMANCE REPORTS

When the DQC Manager receives a Nonconformance Report, he or she assesses the affect the reported nonconformance has on form, fit, and function. The DQC Manager may assign a disposition of either:

REPLACE: The nonconformance can be brought into conformance with the original specification requirements by replacing the nonconforming item with a conforming item.

REPAIR: The nonconformance can be brought into conformance with the original requirements through completion of required repair operations.

REWORK: The nonconformance can be made acceptable for its intended use, even though it is not restored to a condition that meets all specification requirements. The DQC Manager may specify

standards that apply to the completion of rework. Rework nonconformances must be approved by the customer.

USE AS-IS: When the nonconforming item is satisfactory for its intended use. Any use as-is items that do not meet all specification requirements must be approved by the customer.

9.2.4. CORRECTION OF NONCONFORMANCES

The Design Engineer verifies that corrective actions eliminate the nonconformance to the requirements of the original specifications or as instructed by the disposition of the nonconformance report, and then removes, obliterates, or covers the nonconformance marker.

Furthermore, the Design Engineer ensures that previously completed work is reinspected for similar nonconformances and corrective actions are taken to avert future occurrences.

9.3. CORRECTIVE ACTIONS

9.3.1. CONTROL OF CORRECTIVE ACTIONS

When a nonconformance is found, the Design Engineer ensures that:

- Previously completed work is reinspected for similar nonconformances
- Corrective actions are taken to avert future occurrences

The DQC Manager identifies requirements for corrective actions with respect to frequency, severity, and detectability of quality nonconformances items found during and after completion of work activities.

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

9.3.2. CORRECTIVE ACTION TRAINING

The Design Engineer initiates corrective action training to address quality nonconformances. 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 corrective action improvement items. A qualified Design Engineer inspects corrective actions during regular quality inspections and records observations on the quality inspection form.

The Design Engineer notifies affected architects, engineers, and subcontractors of selected preventive action training requirements.

The Design Engineer evaluates the effectiveness of the improvements. The DQC Manager reviews improvement results recorded on quality inspection records and monthly field reviews. When the DQC Manager determines that the improvement actions are effective, the item is no longer treated as a preventive action.

List of Included Forms

Standard Forms:

- Point Of Contact List
- Project Organization Chart
- Project Quality Communications Plan
- Quality Manager Appointment Letter
- Project Manager Appointment Letter
- Superintendent Appointment Letter
- Personnel Certifications and Licenses
- Project Personnel Resumes
- Project Subcontractor and Supplier List
- Training Plan
- Training Log
- Regulatory Codes and Industry Standards
- Project Regulatory Building Codes
- Controlled Materials Form
- Metals Material Receiving Inspection Report
- Material Inspection and Receiving Report
- Inspection and Testing Standards
- Quality Inspection and Test Plan
- Test Equipment Calibration Plan and Log
- Quality Controlled Work Task List
- Daily Production Report
- Work Task Inspection Form
- Nonconformance Report
- Punch List
- Project Completion Inspection Form
- System Document Control Form
- Project Records Control Form
- Project Quality System Audit Form

[CompanyName]

QA/QC Forms



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[CompanyName] Project Submittal Form						
Submittal ID#	Project ID	Project Name Date				
	[ProjectNumber]	[ProjectName]				
То:		From: Precision Plant Services Location:				
Type of Submittal: Shop drawing Product data Request for information Completed form or quality red Quality system document	cord	Description of submittal:				
List of attachments:		Remarks:				
Submittal Prepared by: Precision Plant Services	C	Submittal Approved by Precision P	lant Services Quality Manager:			
Name:		Title:				
Title: Signature / Date:		Signature / Date:				
Customer Disposition: Approved		Customer Representative:				
Conditionally approved, result comments)	omission not required (see	Name:				
Disapproved, resubmission required		Title:				
Other:		Signature / Date:				
Comments:						

[CompanyName] Change Order Form							
Change Order ID#	Project ID	Project Name	Preparer and Date				
	[ProjectNumber]	[ProjectName]					
Requestor Name : Date: Request Reference Document:		Contract change requested by: Precision Plant Services Client Architect/Engineer Project Manager Code Enforcement Official Other:					
Change order description:		Reason(s)s for change order: Supporting documentation provided:					
Time Extension Required: ② Yes ② No Number of Days*: Reason:		Cost Change Required? ② Yes ② No Amount* \$ Reason:					
Supporting documentation attached:		Supporting documentation attached:					
Customer Approval:		Precision Plant Services Approval:					
Name/Date		Name/Date					

[CompanyName] Subcontractor and Supplier Qualification Form				
Company Name:		Scope of \	Work (specifica	ation sections):
Project ID	Project Name	Арр	roval	Approved By
[ProjectNumber]	[ProjectName]	□Yes □Condi □No	itional	
	ipplier Quality System:	Subcontr	ractor and Su	upplier site quality inspection
	ision Plant Services Quality System	_		tion required before approval
	c under subcontractor's quality system	☐Site q		tion of product/material required before
Review Topics	Project-Related Job Credentials			.01
	Licenses required:		License an	d expiration dates:
	Certification required:		Certification	ons and expiration dates:
	Training required:		Training co	ompleted and expiration date:
	Type and length of experience required:		Certification	ons and expiration dates:
	Personnel license, certification, and training required: List each person's credentials on the Subcontractor Supplier Certifications and Licenses form.			
	Qualifications			
	Senior person designated as Quality Manage	er	Demor	strated results
	☐ Knowledge of Company quality standards		Effectiv	ve self-inspection process
	Demonstrated capability to complete work	to	Access to codes, standards and product instructions	
	Company quality standards		_ ` `	nent availability
	☐ Demonstrated skills and knowledge ☐ Demonstrated experience		l	tion capacity
	QUALIFICATION NOTES;		Staffing	g availability
	QUALIFICATION NOTES;			
Provisional Appro	val: Action plan for improvement			
Follow-up results	and date			



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