



# **Chapter 4: Contractor Quality Control**

**Seattle District, NWS**

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## Chapter 4

### Contractor Quality Control

**1. GENERAL.** Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organizations necessary to produce an end product, which complies with the contract requirements.

The following requirements of the "Quality Control System" will aide in a well organized program that will provide a successful contract for both the Contractor and the Government. QC's success or failure at Quality Control of the "Three Phase System" is directly measured in the CCASS review. The CCASS metrics are provided in Appendix B (ER 415-1-17).

**2. CONTROL PLAN:** Furnish for Government review, not later than the number of days after NTP as noted in the contract, the Contractor Quality Control (CQC) Plan. The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. Design and construction may begin only after acceptance of the CQC Plan.

**3. CONTENT OF THE CQC PLAN:** The CQC Plan shall include, as a minimum, the following to cover all design and construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents subcontractors, designers of record, consultants, architect/engineers (AE), fabricators, suppliers, and purchasing agents:

a. Description of the quality control organization. Include a chart showing lines of authority and an acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified.

b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function. Also include those responsible for performing and documenting the inspections required by the International Codes and the special inspection program developed by the designer of record. A copy of the letter to the CQC System Manager, signed by an authorized official of the firm, which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract.

c. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents subcontractors, designers of record, consultants, architect engineers (AE), offsite fabricators, suppliers, and purchasing agents. Submittal processes can be found in Chapter 1 of this document.

d. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. Use only Government approved Laboratory facilities. A list of all inspections required by the International Codes and the special inspection program required by the code and this contract.

e. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation. Procedures for tracking construction



deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected. Also, reporting procedures, including proposed reporting formats.

f. A list of the definable features of work. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable feature under a particular section. Example: Rough in Plumbing, and Finish plumbing would have two separate definable features of work for two different preparatory meetings.

g. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

h. Notification of Changes: After acceptance of the CQC Plan, notify the Government in writing of any proposed change. Proposed changes are subject to Government acceptance.

**4. COORDINATION MEETING:** After the Post Award Conference, before start of design or construction, and prior to acceptance by the Government of the CQC Plan, the Contractor and the Government shall meet and discuss the Contractor's quality control system. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, design activities, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. The Government will prepare minutes of the meeting for signature by both parties. The minutes shall become a part of the contract file.

**5. QUALITY CONTROL ORGANIZATION:** The requirements for the CQC organization are a CQC System Manager, and sufficient number of additional qualified personnel to ensure contract compliance. The CQC organization shall also include personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly.

The Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff shall be subject to acceptance by the Contracting Officer. The CQC organization shall be responsible to maintain all contract required documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

**6. CQC SYSTEM MANAGER:** An individual within the onsite work organization that shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager will meet all of the contract requirements for education, training and experience for this position. The CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. Assign the CQC System Manager no other duties. The requirements for the alternate shall be the same as for the designated CQC System Manager but the alternate may have other duties in addition to serving in a temporary capacity as the acting QC manager. CQC System Manager shall have completed the course entitled "Construction Quality Management for Contractors."

**Organizational Changes:** When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.



**7. CONTROL:** Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. The CQC organization shall conduct at least three phases of control for each definable feature of the construction work as follows:

**Three Phase Reporting System:**

**8. PREPARATORY:** Perform this phase prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. See Figure 4-1 for a QCS generated Preparatory Control Phase Worksheet. This phase shall include:

a. A review of each paragraph of applicable specifications, reference codes, and standards. Make a copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field at the preparatory inspection. Maintain these copies in the field, available for use by Government personnel until final acceptance of the work.

b. Review of the contract drawings.

c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.

d. Review of provisions that have been made to provide required control inspection and testing.

e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.

f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.

g. A review of the appropriate activity hazard analysis to assure safety requirements are met. Review the activity analysis with each worker and have them sign the AHA. AHA requirements can be found in Chapter 5 of this document. Discuss Accident Reporting with the contractor and review Chapter 5 of this document for procedures.

h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.

i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.

j. Discussion of the initial control phase.



**k.** Prior notification to the Government is required for the Preparatory Meeting. This meeting shall be conducted by the CQC System Manager and attended by the superintendent, SSHO and other CQC personnel (as applicable), and the foreman responsible for the definable feature. Document the results of the preparatory phase actions by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

**l.** Review all RFIs associated with the definable feature of work.

**m.** Review all modifications associated the definable feature of work.

**9. INITIAL:** Accomplish this phase at the beginning of a definable feature of work. See Figure 4-2 for a QCS generated Initial Control Phase Worksheet. Include the following actions:

**a.** Check work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.

**b.** Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing. Resolve all differences and deficiencies.

**c.** Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.

**d.** Check safety to include compliance with and upgrading of the Accident Prevention plan and activity hazard analysis. Review the activity analysis with each worker. Particular attention should be given to high hazard work.

**e.** Prior notification to the Government is required for Initial Phase meeting. The CQC System Manager shall prepare and attach to the daily CQC report separate minutes of this phase.

**f.** Repeat the initial phase any time acceptable specified quality standards are not being met.

**10. FOLLOW UP:** Perform daily checks to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Conduct final follow-up checks and correct deficiencies prior to the start of additional features of work which may be affected by the deficient work. Do not build upon nor conceal non-conforming work.

**11. TESTS:** Testing Procedure: Perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements and project design documents. Upon request, furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory, or establish an approved testing laboratory at the project site.



- a. Verify that testing procedures comply with contract requirements and project design documents.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. Include results of all tests taken, both passing and failing tests, recorded on the CQC report for the date taken. Include specification paragraph reference, location where tests were taken, and the sequential control number identifying the test. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. Provide an information copy of tests performed by an offsite or commercial test facility directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

## 12. COMPLETION INSPECTION:

**a. Punch-Out Inspection:** CQC Manager shall conduct an inspection of the work. Prepare a punch list of items which do not conform to the approved drawings and specifications and include in the CQC documentation, as required by paragraph "DOCUMENTATION." The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

**b. Pre-Final Inspection:** As soon as practicable after the notification above, the Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Deficiency List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled.

**c. Final Acceptance Inspection:** The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall attend the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups and major commands may also attend. The Government will formally schedule the final acceptance inspection based upon results of the Pre-Final inspection. Provide notice to the Government at least 14 days prior to the final acceptance inspection and include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all



remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection.

**13. DOCUMENTATION:** Maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers. The report includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day. Include work location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and references to specifications/drawings requirements. Identify the applicable control phase (Preparatory, Initial, Follow-up) for this report. List deficiencies noted, along with corrective action.
- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.
- g. Offsite surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.

**14. CONTRACTOR'S VERIFICATION STATEMENT:** These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. Furnish the original and one copy of these records in report form to the Government daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, submit one report for every 7 days of no work and on the last day of a no work period. Account for all calendar days throughout the life of the contract. The first report following a day of no work shall be for that day only. The CQC System Manager shall sign and date reports. The report shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel. The Contractor may submit these forms electronically, in lieu of hard copy.



**15. NOTIFICATION OF NONCOMPLIANCE:** The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

**16. QUALITY CONTROL SYSTEM (QCS):** The Government will use the Resident Management System for Windows (RMS) to assist in its monitoring and administration of this contract. The Contractor shall use the Government-furnished Construction Contractor Module of RMS, referred to as QCS, to record, maintain, and submit information throughout the contract period. The Contractor module, user manuals, updates, and training information can be downloaded from the RMS web site. This joint Government-Contractor use of RMS and QCS will facilitate electronic exchange of information and overall management of the contract. QCS provides the means for the Contractor to input, track, and electronically share information with the Government. See Figure 4-3 for an RMS generated Deficiency Log and Figure 4-4 for an RMS generated QC Daily Report.

**QCS USER GUIDE:** After contract award, the Contractor shall download instructions for the installation and use of QCS from the Government RMS Internet Website. In case of justifiable difficulties, the Government will provide the Contractor with a CD-ROM containing these instructions.

**17. REQUEST FOR INFORMATION:** The Government requires the use of RMS/QCS to log official Requests For Information (RFI). See Figure 4-5 for an example form. Insure the RFI submitter completes all sections of the form. All RFI submittals should be able to explain the discrepancy on their own and should not rely on previous conversations or knowledge not relayed in the RFI. A complete RFI references the specific contract item(s) of concern, explains the question, provides recommended solution(s) and recognizes whether that suggested solution carries a cost or time impact from the contractor's viewpoint. In doing this, the contractor should include all drawings and specification description and any attachments required to explain the question/discrepancy.

This level of detail is required because RFIs are often answered by the Designer of Record or another subject matter expert that may not be involved in the day to day operations of the project.



**18. SUBMITTALS:** Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures must be in accordance with Contract Specification Section SUBMITTAL PROCEDURES, and Chapter 1 of this document. Maintaining a complete and updated Submittal system is paramount in a successful Quality Control System.

Enclosures

Figure 4-1 Preparatory Control Phase Worksheet

Figure 4-2 Initial Control Phase Worksheet

Figure 4-3 Deficiency Log

Figure 4-4 RMS Sample QC Daily Report

Figure 4-5 RMS Sample Request for Information (RFI)

