COMPLETION INSPECTIONS

Completion Inspections by the contractor's QC organization ensure a facility that complies with the contract for turnover to the government. When work is complete, the QCM conducts a *Punch-out Inspection*. After correction of the punch list work, the QCM participates in a *Pre-Final Inspection* and *Final Acceptance Inspection* with the government. Effective QC action enables the contractor to expeditiously schedule and complete outstanding compliance items. Prompt completion allows full payment to be made.

REPORTING

Documentation is the proof of QC efforts and contract compliance. The required reports must be complete and accurate, must validate the adequacy of quality controls, and must be submitted timely.

Daily Production Reports document prime and subcontractors' activities and safety compliance. *Daily QC Reports* list the *DFOW*, Phase of Control, observations, results of control actions taken and any corrective actions. Include complete information on the 3 Phase controls, inspections, tests, rejected work, and safety monitoring. Document instructions received from the government.

Each daily report entry must be referenced to its associated *Schedule Activity ID*.

GOVERNMENT ROLE

The government will review daily reports and other required documentation to determine the adequacy of the contractor's QC system. The government's interest is that the contractor maintains the necessary control to prevent any "rework" or tear out. The government will emphasize inadequacies in the quality control program instead of individual construction deficiencies.

QC + QA = CQM

Construction Quality Management (CQM) requires the combined efforts of contractor QC personnel and government QA personnel to achieve our shared goals - quality construction built safely, on time and within budget.

Naval Facilities Engineering Command

1322 Patterson Ave SE Suite 1000
Washington Navy Yard DC 20374-5065

Effective quality control supports worker pride, results in favorable recognition, and has the potential to increase the profit margin for contractors.

Achieving high quality performance can help the contractor earn repeat business.

For more Information

202 685 9210

NAVAL FACILITIES ENGINEERING COMMAND

Effective Quality Control

Department of the Navy

QUALITY CONTROL DRIVES COSTS DOWN...DRIVES PRODUCTION AND CUSTOMER SATISFACTION UP!

Achieving Construction Quality

Construction contractors enhance their opportunity for Navy business by maintaining a strong project Quality Control (QC) system. Schedule goals are achieved through regular production/QC meetings and proactive contractor leadership that "builds it right the first time" and builds it safely. QC staff manage specified QC processes, including submittals, preventive controls, inspections, tests and documentation. The contractor manages daily quality control of all trades from project award through Completion Inspections and acceptance by the government. The government, in its Quality Assurance (QA) role, ensures that the contractor's QC system is effective.

THREE PHASE CONTROL CONCEPT

The contractor's control of quality is divided into three phases for each Definable Feature of Work (*DFOW*). A *DFOW* is a task that is separate from other tasks and has control requirements unique to that task. Typical examples of *DFOW*s are exterior water piping, excavation for foundations, concrete foundations, masonry walls, interior electrical wiring, etc. Performance of all three phases is the contractor's responsibility. Each control phase is an opportunity to prevent problems and costly rework.

CONTRACTOR RESPONSIBILITIES

- Produce a quality product on time, safely and in compliance with the contract.
- Provide a quality control system that prevents deficiencies.
- Identify each proposed *DFOW* and establish a 3-Phase control process.
- Inspect construction and perform specified testing to ensure quality.
- Track and correct any non-complying work.
- Provide submittals of all products incorporated into the work.
- Document and maintain records of all QC activities.
- Perform Punch-Out Inspections and participate in Pre-Final and Final Acceptance Inspections.

PLAN OF ACTION

Requirements for developing the *QC Plan* are found in the QC specifications of the contract. The contractor submits a QC Plan showing how the designated QC organization will proactively manage and control all *on-site* operations, and *offsite* fabrication, e.g., structural steel, precast concrete, major systems.

REQUIRED MEETINGS

Prior to the start of work, a *Pre-Construction Conference*, a *QC Plan Meeting* and a *Coordination and Mutual Understanding Meeting* are held. These meetings ensure a complete understanding of the QC system and clarify the interrelationships between contractor and government personnel. During construction, the contractor conducts regular *QC/progress meetings*, *Preparatory* and *Initial Phase meetings*.

TRAINING

The contractor's Quality Control Manager (QCM) is required to be thoroughly familiar with the NAVFAC Construction Quality Management Program and specific requirements to ensure contract compliance. QCMs are required to complete and receive certification of completion of NAVFAC's training course, *Construction Quality Management for Contractors*, prior to serving as QCMs.

SUBMITTALS AND PROCUREMENT CONTROL

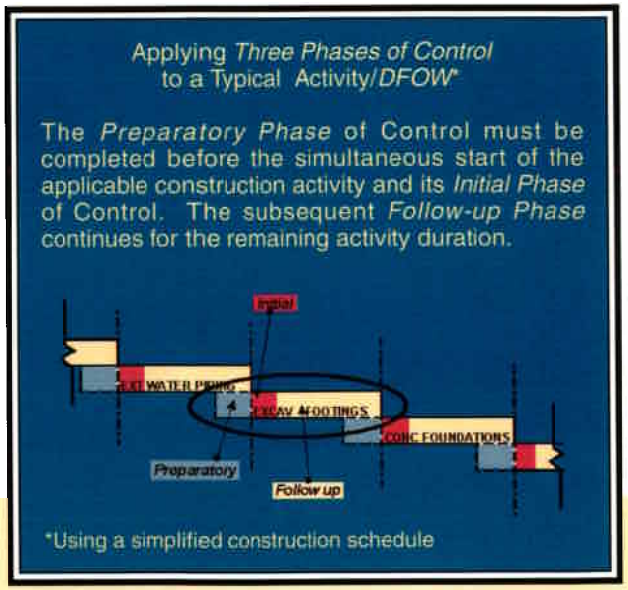
The contractor is responsible for *review*, *approval* and management of submittals and for *timely delivery* of approved materials, fabricated items and equipment to be installed. The contract lists the required submittals. The QCM *certifies* that each submittal is in compliance with the technical provisions of the contract. The contractor prepares a Submittals Register and a network of scheduled activities, updating each monthly to minimize the potential for construction delays due to missing or unapproved materials or equipment. The schedule must allow adequate time for government-approved submittals.

TESTING

Testing is the contractor's responsibility and is essential to controlling quality. The contractor must:

- Check the contract to determine required on-site and off-site testing.
- Select qualified personnel, labs, equipment and procedures that comply with specified standards.
- Schedule timely testing and follow-up testing.
- Submit required testing documentation in a timely manner.

The government may check laboratories, equipment, and procedures for compliance.



Three Phases of Control

The Preparatory Phase
is performed and documented *prior to* starting the *DFOW*. Example actions include: reviewing and approving submittals; reviewing applicable contract drawings, specifications, test requirements, safety requirements and Activity Hazard Analyses; inspecting delivered materials and construction to be interfaced with, etc. Construction standards and contract interpretation issues are discussed and settled before start of the *DFOW* to avoid the need for "tear out" after work is in place. The preparatory process pays dividends by locating and resolving conflicts in advance of construction.

The Initial Phase
is performed and documented at the *beginning* of each *DFOW*. This is an opportunity for the contractor to get the work off to a proper start in compliance with contract requirements and to establish standards and quality of workmanship. Testing procedures and compliance with safety standards are validated. The Initial Phase helps to achieve preventive control and to reach early agreements on quality.

The Follow-up Phase
for each *DFOW* is surveillance, inspection and documentation of the work to determine *continuation* of compliance with the contract requirements and quality of workmanship confirmed during the Preparatory and Initial Phases. The Follow-up Phase may be performed on a daily, routine, or predetermined basis as required to ensure contract compliance. The Follow-up Phase is more productive when preceded by thorough Preparatory and Initial Phases.