CHAPTER 12. QUALITY ASSURANCE MANAGEMENT PLAN

12.1 Policy. Huntsville Center's policy and procedures for Construction Quality Management are established in this chapter, and apply to all personnel and organizational elements of the Huntsville Center having responsibility for awarding and supervising construction contracts. The intent of the policy is to provide customers with a quality product on a timely basis at a reasonable cost. The key to achieving a quality product is to develop and implement a comprehensive and effective Construction Quality Management program at each field office activity. Obtaining quality construction is also the joint responsibility of the construction contractor and the Government. Their mutual goal must be a quality product conforming to the contract requirements. A cooperative and professional working relationship is necessary to realize this common goal.

12.2 References.

a. ER 1180-1-6, Construction Quality Management.

b. ER 415-1-10, Contractor Submittal Procedures.

12.3 Definitions.

a. Quality - conformance to properly developed requirements. In construction contracts, the contract specifications and drawings establish these requirements.

b. Quality Management (QM) - all control and assurance activities instituted to achieve the quality established by the contract requirements.

c. Contractor Quality Control (CQC) - the construction contractor's system to manage, control, and document their own, their supplier's, and their subcontractor's activities to comply with contract requirements.

d. Quality Assurance (QA) - the Government's system to make certain the CQC is functioning and the specified end product is realized.

12.4 Responsibilities.

a. Contractor Responsibility. Contractors are responsible for all activities necessary to manage, control, and document work so as to ensure compliance with the contract plans and specifications. The contractor's responsibility includes providing adequate quality control services for work accomplished on and offsite by his or her organization, suppliers, subcontractors, technical laboratories, and consultants. It is the contractor's responsibility to carefully examine the contract for CQC and provide personnel capable of complying with the CQC requirements stated in the contract clauses and technical provisions. The CQC staff must be large enough and have the necessary qualifications for all work performed by the prime contractor or by subcontractors or vendors. The CQC system manager will be an employee of the prime contractor and must report directly to the project superintendent or someone higher in the contractor's organization. Since the size and composition of the CQC organization may vary as the job progresses, the CQC staff, at all times, should be compatible with the level of effort and capability required by the contract and construction schedule.

b. Government Responsibility. Quality assurance is the process by which the Government assures end-product quality. The process starts well before construction and includes reviews of the plans and specifications for biddability, constructability, operability, and environmental responsibility. It also includes plan-in-hand site reviews, coordination with using agencies or local interests, and establishment of performance periods and quality control requirements. Field office planning, preparation of QA plans, reviews of quality control plans, enforcement of contract clauses, maintenance of quality assurance and quality control inspection and work records, and acceptance of completed construction are included in the Federal QA program.

c. Perform the following activities prior to construction:

(1) Prepare a written quality assurance organizational operating plan at the Directorate level with input from the Resident Engineer. The plan must address the overall QA operations of the Center and field offices. The plan provides a road map for the QA operations for the coming year. Develop supplements incorporating project specific requirements for all contracts managed by the Resident Office.

(2) Pre-award activities.

(3) Site plan-in-hand reviews. This is the field office's responsibility.

(4) Review field office workloads and staffing needs.

(5) Assure that office and field personnel have a clear understanding of QA/CQC responsibilities. Identify training needs and access training through the appropriate combination of in-house and PROSPECT courses.

(6) Review the contractor's CQC plan and assure affirmative answers to the following questions as a minimum:

(a) Does the plan adequately cover all features of the contract?

(b) Is the CQC staff adequately sized to maintain quality and accomplish the tests required?

(c) Have all people responsible for each definable feature of work, all tests, and submittal control and review been identified?

(d) Do the qualifications of the staff appear adequate for the control and test requirements?

(e) Is the delegation of responsibility and authority to the CQC staff manager clear? Does this person report directly to the highest ranking contractor personnel onsite (one with responsibility for the overall management of the project including quality and production)?

(f) Are the CQC organizational lines of authority and responsibility clear?

(g) Are the individual control and test duties clearly assigned?

(h) Do the proposed control and test report forms include all the required features and reporting items? Are systems commissioning procedures clearly detailed?

(i) Does it comply with the specific requirements established by the contract special clause?

(j) Are definable features of the work identified? A definable feature of work is a task, which is separate and distinct from other tasks and has separate control requirements. For example, definable features for concrete would be formwork, reinforcing and imbedded items, placement including mix design, finish, etc.

(7) Accept the CQC plan subject to satisfactory performance and reserve the right to require revisions to correct unsatisfactory performance.

d. Implementation and Enforcement. Quality assurance personnel (QAP) will perform the following activities during construction:

(1) After the pre-construction conference, the Resident Engineer or other responsible designee will conduct coordination meeting with the contractor on the CQC/QA program. Both the contractor and the government representative will sign the minutes of the meeting.

(2) Construction will not start until after the coordination meeting and submittal and acceptance of at least the interim CQC plan, if required.

(3) Require a revised CQC plan and its execution as necessary to obtain quality.

(4) Verify adequacy and calibration of test equipment, application of specified test standards, and computation of test results.

(5) Spot check CQC approved submittals.

(6) Review the contractor's daily quality control reports (QCR) to assure that (s)he adequately documents quality control operations. If reports are not adequate, require the contractor to submit a supplementary report containing the necessary information as specified in CEGS-01440. The QAP will not alter, sign, initial, or approve the QCR.

(7) Hold periodic job site assurance conferences on CQC/QA interrelationships of activity and effectiveness.

(8) Participate in the four-phase control process as necessary to assure that the contractor is adequately conducting the required control processes. Attend a majority of the preparatory and initial-phase meetings including mechanical, electrical, and critical features (i.e., roofing and waterproofing). The government participant will be totally familiar with contract requirements. Ensure that the contractor prepares minutes of each preparatory and initial meeting and includes highlights of each control phase on the daily CQC report. These reports must be readily accessible for quick reference throughout the life of the project.

(9) Conduct government QA tests at the job site to assure acceptability of the completed work. Schedule a sufficient number of tests, but not less than 5 percent of the frequency of the CQC tests, to verify CQC test procedures and results. For test procedures in which duplicate sampling is appropriate, the contractor will furnish duplicate samples for possible QA testing of a minimum of 20 percent of the CQC test specimens. As a minimum, one-fourth of these duplicate samples should be tested, and the results compared to the CQC test results to verify test procedures and results. The contractor should not know in advance which duplicate samples will be tested, so that the CQC staff will not know which of the CQC test results are subject to verification. QA test results performed on duplicate samples should be made available to and discussed with the contractor to reconcile any discrepancies. Obtaining and testing duplicate samples is part of and is not in addition to the requirement to perform QA tests at a minimum frequency of 5 percent of the CQC test. QA testing and inspection should be conducted at unannounced intervals. The COR should verify the accuracy and calibration of equipment, assure correct application of specified test standards, and verify the coverage and accuracy of required CQC tests by observing approximately 10 percent of the CQC tests. The exact number of tests observed will be commensurate with the confidence level in the contractor's CQC system and consistency in government and contractor test results. Test reports, which should be attachments to the contractor's CQC reports, should be reviewed by government engineering or laboratory personnel and/or by QA personnel assigned to the work depending upon the type of test.

(10) Monitor the contractor's procedures for tracking construction deficiencies to assure acceptable corrective action and to assure that an audit trail is maintained.

(11) Ensure that new work is not placed on unacceptable work or that progress payments do not include the value of nonconforming construction.

(12) Prepare QA reports and all other necessary QA documentation as detailed below:

(a) Quality assurance personnel will prepare a daily report for each construction or fabrication visit on each contract and project accomplished by government plant and hired labor. If for some reason QAP did not visit the site on a particular day, the reason and pertinent observations as to events occurring during period of absence will be included in the Quality Assurance Report (QAR) for the next visit day. The purpose of the QAR is to document government activities in the day-to-day administration of the contract. Use memoranda for the record (MFR), letters, and the QAR to provide a formal record of contract information. Take particular care to record and preserve all possible data and exhibits for any matter, which may become the basis for a claim.

(b) The reports will be prepared on ENG Forms 2538-1-R, Inspectors Quality Assurance Report (QAR). Electronically generated reports are authorized.

(c) Include all pertinent items of information in the QAR. Data incorporated on the contractor quality control report will not be repeated on the QAR, unless it is necessary to augment or correct erroneous entries on the QCR.

(d) The resident engineer/project engineer or their designees are responsible for assuring that the QAR contains all pertinent items of information. In order to assure the accuracy and completeness of the QAR, this individual will review initial reports by QA personnel and perform follow-up reviews as deemed necessary to confirm/maintain continued acceptability. Initial all reports reviewed.

(13) QA personnel will review the entries on the contractor's QCR. The QCR should contain information on the contractor's quality control operations. Do not burden the report with peripheral information. Attach the QCR to or file it with the QAR to form a complete quality control/quality assurance report, retained until job completion, and then forwarded to the Huntsville Center to be kept in the specific contract file.

(14) Document contractor performance throughout the contract and initiate interim and final unsatisfactory ratings where necessary.

d. Performing Acceptance Inspections. The Government is responsible for acceptance inspections of completed construction, subsequent to CQC completion inspections.

12.5 Procedures.

a. The RO will develop a QA plan for the construction and installation of the equipment of the Chemical Disposal Facility, which addresses inspection and testing efforts. Forward these QA plans to CEHNC-CD-QA for review. Guidelines for preparing a QA plan, as deemed necessary by the Resident Engineer, are provided in Exhibit 12*1. These guidelines are suggested for adaptation in formulating the general quality assurance plan.

b. The CQC plans for the systems contract must specifically address the fixed-price phase of the contract. In Exhibit 12*2 are guidelines for preparing a CQC plan.

c. Each RO will implement an informal training program to improve individual inspector knowledge of contract technical provisions and proper construction techniques. Training should focus on strengthening individual weaknesses, as well as preparing for upcoming critical construction activities. Forward resident office training schedules to the Construction Directorate, ATTN: CEHNC-CD-QA. Use the format shown in Exhibit 12*3 for submitting a training schedule.

d. Resident offices will use Blanket Purchase Agreements (BPA's) or other contractual means, unless in-house capability exists, to perform independent QA testing.

e. Huntsville Center quality assurance management will conduct assistance visits (biannually) at each resident office. These visits will assist RE's in their respective quality assurance programs and provide a transfer of key information learned Center-wide to resident offices. The visit will focus on RO management of quality assurance activities rather than technical evaluations of specific problems. However, the QA management assistance visits will include members from the QA branch technical staff as necessary to review the technical adequacy of ongoing construction. Inspection procedures for the Huntsville Center QA visits are outlined in Exhibit 12*4.

f. The QA Branch is available for special architectural, civil, structural, electrical, and mechanical inspection assistance to field offices as requested.

g. Each Resident Office will develop a procedure for managing contractors' Requests for Information (RFI's) based on the guidance in Exhibit 12*5. Exhibit 12*5 also has a section on contract interpretation to aid in RFI processing and management.

12.6 CEHNC Responsibilities.

a. Chief of Construction Directorate.

(1) Establishes overall policies, goals, and objectives for conducting the quality assurance effort. The Chief will personally review and approve each Construction Directorate policy.

(2) Allocates and distributes Huntsville Center resources for sufficient QA staffing to accomplish quality construction.

(3) Provides overall staff administrative management of the Center QA Program.

(4) Ensures coordination with engineering elements involved in the overall QA effort.

b. Resident Engineer

(1) Manages and directs field QA activities to ensure that both the contractor and the Corps have a common goal of timely completion and quality construction.

(2) Supervises reviewing and approval of CQC plans for contract compliance.

(3) Supervises developing the QA plan and makes final approval. Ensures QA plans reflect optimization of resources with priority given to preparatory and initial inspection phases.

(4) Ensures effective and efficient performance of quality assurance by ensuring that:

(a) QA personnel receive specific assignment of responsibilities and authorities.

(b) QA personnel have QA Inspection and Reporting as critical elements in their performance standards and that standards established will result in successful QA performance.

(5) Reviews QC/QA daily reports, from a management perspective, as required to ensure that:

(a) QA and CQC plans are implemented.

(b) QA supervisory personnel assign technically qualified personnel to all inspection phases.

(c) Contractors do not construct or conceal any work containing defects.

(d) Independent testing by the Government at unannounced intervals IAW QA plan is performed to ensure an acceptable product and verify CQC testing procedures and results.

(6) Ensures QA supervisory personnel coordinate and conduct regularly scheduled meetings with the contractor's CQC supervisory personnel to discuss QC plans, QC/QA interface, inspection schedules, and major current and repetitive deficiencies.

(7) Identifies solutions to CEHNC-CD-QA on repetitive construction deficiencies.

(8) Requests Center help in obtaining TDY assistance for contracts that do not have sufficient resources for QA surveillance.

c. Chief, Quality Assurance.

(1) Advises the Center Commander and staff on QA matters.

(2) Coordinates, schedules, and assigns members for special field office technical assistance visits.

(3) Coordinates and develops Construction Directorate (including field offices) training schedules for all employees and makes arrangements for HQUSACE training.

(4) Ensures field offices have a blanket purchase agreement, or other contractual means, for independent testing laboratories to do QA testing.

(5) Ensures that an adequate technical library is obtained and updated. Provides copies of technical literature (TM, CEGS, Federal Specs, ASTM, etc.) to field offices upon request.

(6) Schedules biannual management assistance visits to Resident offices to assure quality assurance management activities are being performed. At exit briefings, furnishes a rough *handwritten* report of findings to the RE. Following each visit, provides a *written* report documenting findings and recommendations to the RE.

(7) Reviews QA/QC plans and furnishes comments within two (2) weeks of receipt, as appropriate, to the RE.

(8) Develops and recommends procedural guidelines for, and support of, resident office operations in QA/QC, including standardized inspection forms and checklists.

(9) Provides a point of contact for resident office verification testing by commercial laboratories and initiates action to provide resident offices with the necessary testing devices. Arranges instructional training to personnel with the necessary testing devices. Arranges instructional training to personnel on methods of conducting tests and observes both QC and QA test performance.

(10) Assists in developing and implementing a Center-wide training program in the Resident Office for QA and construction.

(11) Develops and coordinates Title II, TDY requirements for QA assistance for Center field elements and initiates requests for assistance.

(12) Identifies possible design deficiencies during routine quarterly visits and forwards the information for consideration as design feedback to the ChemDemil Design Management Integration Division.

(13) Develops a manageable repetitive construction deficiency list and circulates it to all field offices for information and use.

(14) Circulates an exchange of workable QA techniques and lessons learned in the form of HQUSACE Construction and DCAF Bulletins for information and use.

f. Chief, Contracting Directorate: Is the Contracting Officer responsible for Blanket Purchase Agreements or other contractual means for independent testing laboratories that support each resident office with QA testing services.

GUIDELINES FOR PREPARING A QA PLAN

1. Purpose: This is the Resident Office QA Supervisor's plan for monitoring the contractor's CQC System performance to ensure an acceptable quality end product by efficient utilization of available time and resources to optimize the preparatory and initial phases of the Four-Phase Inspection System. It also results in a management tool which allows the supervisor to easily redistribute work loads during absences of QA Reps and allows a new QA Supervisor either temporary (acting) or permanent to effectively assume this role.

2. Scope: See paragraph 8.3.5a of basic policy.

3. Plan Elements: In developing a QA Plan, the following are considered the essential elements of an acceptable plan:

a. Four-phase Inspection schedule for major elements of work.

b. QC Testing schedule.

c. Independent QA Testing schedule.

d. Standards for QA Reporting.

e. Procedures for Correcting Deficiencies (Enforcement).

f. Regularly Scheduled Formal Meeting with Contractor Staff.

g. Specialized Assistance and Training.

h. Responsibility of the Resident engineer, construction representative, and QA task related personnel.

4. CQC Plan: To effectively develop a good QA plan, an acceptable CQC must exist around which the QA plan is to be tailored. Following are guidelines for review of the contractors QC plan:

a. Is CQC staff adequate to provide complete coverage and in compliance with contract requirements?

b. Will other duties assigned to the individuals permit them adequate time for CQC activities?

c. Is each staff member adequately qualified to perform his assigned task?

d. Is the delegation of authority to CQC personnel clear and adequate, and can he stop the work and direct replacement if necessary?

Exhibit 12*1. Guidelines for Preparing a QA Plan.

e. Are organizational lines of authority and responsibility clear and logical?

f. Are the individual four-phase inspection steps and testing duties clearly assigned to CQC personnel by name?

g. Does the plan cover all the required inspections and tests included in the technical provisions and to whom have they been assigned?

h. If a commercial laboratory or consultant is proposed, has it been approved?

i. Does the proposed Daily QC Report and test report forms include all the necessary features?

j. Are the review procedures adequate for shop drawings, samples and submittals?

k. Are procedures adequate for inspection of or certification of off site fabrication?

l. Are all phases of inspection (preparatory, initial, follow-up and final) adequately covered?

m. Are responsibilities and procedures for correcting deficiencies established?

n. Does the CQC Chief report to an officer of the firm and not to the superintendent or on-site project manager?

o. If a major or critical area of work is to be subcontracted, does the plan adequately address QC procedures?

p. Does the plan adequately address handling and storage procedures?

q. Does the plan include an effective deficiency tracking system?

5. Guidelines for Preparation of QA Plans

a. Title Sheet: See Attachment No. 1 to this Exhibit.

b. Four-Phase Inspection System

(1) General - QA efforts should be concentrated on the preparatory and initial phases of inspection. This is necessary due to the fact that the Corps is dealing with contractors who have difficulties in understanding our standards of quality and in determining which construction methods are necessary to produce this quality. For these reasons we must therefore aggressively participate and concentrate our efforts in these two areas of inspection.

Exhibit 12*1. Guidelines for Preparing a QA Plan (Cont'd).

The most effective utilization of time and resources, and optimization of QA efforts are in these two phases of inspection. ENSURING THAT THE CONTRACTOR DOES IT RIGHT THE FIRST TIME. Historically, too much of our QA effort is involved in the follow-up phase with an inadequate effort in the preparatory and initial phases. Ideally, at the completion of the initial inspection phase, the contractor is incorporating acceptable materials/equipment, using proper construction techniques, workmen are informed and producing acceptable workmanship, and most important of all, the contractor's QC, management/ supervisory staff, and workmen understand what is expected as the standard of quality. Once this point is reached, the follow-up inspections are intended to assure both the contractor and Corps that the mutually agreed on quality of work continues. Deficiencies observed after the initial phase are usually generated by unauthorized substitution of materials, changes in contractor QC/management/supervisory staff, or work crews.

(2) Details - Review all Technical Provisions and Plans. Prepare a list of all major phases of work for which the Four-phase Inspection System implementation is desired. Consider the fact that some TP Sections such as Plumbing General, Interior Electrical, etc., will require several preparatory and initial inspections and some TP Sections such as Roofing Insulation, Built-Up Roofing and Sheet Metal Work would be consolidated. Some phases of work may involve one or more preparatory inspections and several initial inspections such as Plaster Work, For example, should all the materials be on-site, one preparatory inspection may be sufficient. However, a series of initial inspections for the furring and accessories installation, scratch coats, brown coats and finish coats for each of the various types of plasterwork may be required. After completing this list, confirm with and reach mutual agreement with the QC Chief on which phases of work the Four-Phase Inspection System will be implemented. These should be incorporated into the CQC Plan. On large contracts involving more than one set of specifications for the various technical requirements or contracts involving various types of facilities, it may be desirable to break down these major phases of work by facility. This breakdown by facility would facilitate in making job assignments easier. This list then becomes part of the QA Plan if not adequately incorporated in the CQC Plan. It may be desirable to make a copy of the contractors list, if acceptable, and include in the QA Plan.

c. QC Testing Schedule: Review the CQC Plan for the types and frequency of QC tests to be performed during the period of the construction contract and prepare a list of these tests. These should include both laboratory and non-laboratory testing such as mechanical, electrical, etc. If the QC Plan is not compete in this area, review the contract drawings and specifications for QC testing and develop your own list and have the contractor revise his plan accordingly. The QA supervisor must establish guidelines (standards) for QA Reps as to which test should be observed 100% of the time, 50%, etc. Where a large frequency of the same type testing is to be conducted, guidelines (goals) may consider percentages or number ranges further broken down by initial testing, subsequent testing goals and should vary depending on quality of contractor testing. At some point, either in the QC Plan, preparatory inspection or initial inspection, QC and QA must agree on the number and location of tests. For example, where a structure may consist of twenty (20) column footings, the number and location of QC tests must be decided. Again, it may be desirable to break down the QC testing by facility, which would facilitate making job assignments. The QA Plan should contain this listing of all QC testing (type and frequency), guides (goals) for QA observation of these tests and independent QA testing goals.

Exhibit 12*1. Guidelines for Preparing a QA Plan (Cont'd).

d. Independent QA Testing Schedule: Independent QA testing is essential. The number of tests will be based on QA Supervisor judgement unless further guidance is provided by higher echelon. See ER 1180-1-6 for the prescribed minimum number of tests. As part of the list developed under QC testing above, and as mentioned before, add a column for QA testing. The number of tests can vary depending on contractor testing performance and can be based on a percentage of QC testing or by time (one a week, etc.). For example, you may set a goal to perform one independent QA test on the twenty-(20) column footings mentioned before.

e. QA Reporting: QA Reps are required by ER 1180-1-6 to complete a daily report of their activities. In QA reporting, special emphasis must be placed on reporting all significant QA activities. Significant is not easily defined in this respect but it should include detailed information concerning preparatory, initial, follow-up and final inspections. This information sometimes cannot all be included on the report form, but included as a supplemental attachment, particularly when reporting results of preparatory and initial inspections. Guidance on what to report as a result of preparatory and initial inspections is at Attachments 1 and 2 to Exhibit 12*2. Also essential to good QA reporting is a thorough review and comment on the QC Report, QC testing observed, QA testing conducted, clarification and/or instructions given to contractor, details on controversial matters, information relating to unsettled changes and general information concerning contractors' methods of performance if inefficient, etc. Further instructions can be found at Attachment 2 of Exhibit 12*1.

f. Procedures for Correcting Deficiencies: The QA Plan must address the various procedures that the supervisor and QA Reps will use to enforce contractor correction of deficiencies including use of the Notice of Non-Compliance form. Numerous other tools are provided in the General and Special Clauses of the contract. The plan should address how the supervisor intends to utilize these tools. QA Reps for example need to know that they shall not recommend payment for defective work, for materials improperly stored, etc.

g. Regularly Scheduled Formal Meetings with Contractor Staff: Formal meetings with contractor QC Staff is essential for the review of CQC performance, to establish schedules for preparatory and initial inspections, review status of non-corrected contractor deficiencies, status of shop drawing/ material submittals and various other matters that may not be directly related to QA. Frequency of meetings will vary depending on the stage of construction and contractor performance. Meeting discussions must be formally documented. The plan should address the fact that regularly scheduled meetings will be held frequency and an outline of proposed topics for discussion.

h. Specialized Assistance Training: In the development of the plan the supervisor may find that he does not have the resources to adequately assure the quality in some phases of work by inspections or tests due to a lack of QA Reps in certain disciplines or lack of training. The plan should address how the supervisor intends to utilize alternate resources such as Directorate QA support, Engineering Directorate, etc., or provide the training necessary to assure qualified surveillance of CQC operations. When required QA Plans should also address QA monitoring of off-site manufacturing.

Exhibit 12*1. Guidelines for Preparing a QA Plan (Cont'd).

ATTACHMENT NO. 1 to EXHIBIT 12*1

ANNISTON RESIDENT OFFICE
QUALITY ASSURANCE PLAN
CHEMICAL AGENT DESTRUCTION FACILITY
PHASES II, III and IV
ABC CONSTRUCTION CO., INC

CURRENT CONTRACT AMOUNT: $125,000,000.

AWARD DATE: 25 JANUARY 1996

CURRENT OVERALL COMPLETION DATE: 25 DECEMBER 1998

RESIDENT ENGINEER: Mrs. Durham-Aguilera

NOTICE TO PROCEED: 25 March 1996

DATE OF PLAN _____

PREPARED BY _____

REVISED DATE _____

Exhibit 12*1. Guidelines for Preparing a QA Plan (Cont'd).
Attachment 1. Quality Assurance Plan.

ATTACHMENT NO. 2 to EXHIBIT 12*1

SUGGESTED STANDARDS FOR EXCEPTIONAL QA REPORTING

1. Review of the CQC Report

a. CQC Daily Reports are complete, factual, legible and signed by the CQC Chief with the proper certification statement.

b. No significant conflict can be noted between QC/QA Reports for which the records do not show that some attempt to resolve the conflict was made.

c. CQC testing is properly recorded on acceptable forms with complete information as to test location, testing procedure, test data/calculations, and test results.

d. Retests can be easily reconciled to the original failing test.

e. Instructions by QA personnel are accurately reported.

f. CQC Reports reflect in general that the four-phase inspection system is being implemented. If not, the QA Rep is reporting this deficiency in his QA Report.

g. Description of work in progress and materials received and inspected are reported daily. If not, the QA Report will reflect this deficiency.

2. Prepares QA Report

a. QA Reports are prepared daily, are complete, detailed, factual, unbiased, legible & on the proper form.

b. Reports reflect in general an appropriate amount of QA activity for the work in progress for which the QA Rep is assigned.

c. Reports reflect an understanding of an aggressive implementation of the four-phase inspection system.

d. Reports identify the four phases of inspections participated in and the results of those inspections.

e. Reports reflect QA observation of QC testing and the results.

f. Reports reflect that adequate independent QA testing is being performed (QA test reports are attached).

Exhibit 12*1. Guidelines for Preparing a QA Plan (Cont'd).
Attachment 2. Suggested Standards for Exceptional QA Reporting.

g. Deficiencies noted on a daily report can be tracked to subsequent reports and to the date corrective action is accepted.

h. Reports reflect proper instructions or clarifications to contractor's staff.

i. QA Reports include photographs of major deficiencies and deficiencies of a controversial nature.

Exhibit 12*1. Guidelines for Preparing a QA Plan (Cont'd).
Attachment 2. Suggested Standards for Exceptional QA Reporting (Cont'd)

GUIDELINES FOR PREPARING A CQC PLAN

PART I: QC PLAN PREPARATION

1. General: In order to understand what is expected of Contractor Quality Control (CQC) and Government Quality Assurance (QA) programs, first let's agree on some definitions. What is meant by Quality: Quality in this case is simply construction, which meets contract documents, plans and specification. Quality is NOT what may be defined as quality, that the contractor defines as such or by local standards, etc. Quality is defined in contract documentation. Now that Quality has been defined, let's define Control. Control is defined as management. To control is to manage with an end result in mind. Now putting these definitions together, CQC is managing construction in such a manner that the completed construction will meet the requirements as set forth in the contract plans and specifications.

2. Purpose of CQC Plan: The CQC Plan is the contractor's plan which outlines his procedure for establishing and operating a Quality Control System to perform and report sufficient inspections and tests of all items of work, including that of his subcontractor, to insure compliance. This plan should be prepared by the CQC chief who will be managing the QC system.

3. Advance Preparatory Work Essential to the Development or Review of a QC Plan:

a. Make a cursory review of the specification sections, drawings, and if available, cost estimate breakdown to acquire a concept of the scope of the major phases of work.

b. Study Section C in the Description of work entitled Quality Assurance/Quality Control.

c. Throughout preparation or review of an inspection plan, keep in mind the four-phase inspection system of all definable items or phases of work, i.e., preparatory, initial, follow-up and final inspections.

d. Review the contractor's Submittal Register against the specifications prior to the Preparatory Inspection. (The contractor may require more submittals than required by the drawing and specifications.)

e. Highlight (suggest different color) in the specifications of all of the tests that shall be performed by the contractor. The specification requirements for submission of copies of previously conducted tests by a supplier, or independent laboratory, shall be considered as "submittal". (Paragraph d above). These are not tests to be performed by the contractor.

Exhibit 12*2. Guidelines for Preparing a CQC Plan.

f. Develop a list of all phases of work and list the preparatory and initial inspections planned to be conducted. This should be a joint effort between CQC and the Corps individual responsible for Quality Assurance. In developing the list, consider the requirements for preparatory inspections (i.e. all shop drawing/material approvals must have been made). Some TP sections may require more than one preparatory (plumbing/electrical) and some TP sections may be grouped (built-up roofing, roofing insulation and sheet metal work). Some phases of work may have a preparatory followed by a series of initial inspections. Plaster work for example may have only one preparatory (if all materials are on-site) followed by several initial inspections for furring, lath work, installation of accessories, scratch coats, brown coats and finish coats by types of plastering (gypsum, keens, or portland cement). It is very important that the contractor aggressively pursue the preparatory and initial inspections. This is where CQC really pays off. DOING IT RIGHT THE FIRST TIME. QC and QA personnel must work closely during these inspections to ensure that a mutually understood level of quality to be accepted is agreed upon. So, DO NOT BE CONSERVATIVE IN DEVELOPING THIS LIST. Where several types of facilities are under construction you may want to break down the list of preparatory and initial inspections further by facilities. This will facilitate in the assignment of responsibilities to other QC personnel and incorporation of these inspections into the NAS schedule where required.

g. Tabulate the testing requirements (from the highlighting under 3e. above) into a readable format showing specification references, type of test, frequency, conditions, and responsible individual/laboratory in the CQC organization. On large projects it would be advisable to further break down the required testing by facility. This will facilitate making the assignments, authorization and responsibilities to various QC Reps.

h. Determine and list all test equipment to perform all testing. Review specified test procedures to ensure that the equipment listed will satisfy requirements. If contractor lab is to perform test, make arrangements for procurement or delivery of required equipment. If an independent lab is to be used, inspect that lab to verify that it is properly equipped to perform specified testing, and that lab personnel are qualified to perform these tests.

i. Determine to the extent possible what inspection and construction work will be subcontracted. The QC Plan should address, if intended, who will be performing subcontracted inspection work (such as laboratory testing, etc) and construction work (landscaping, mechanical, etc). This section of the plan should address how CQC will interface with subcontractors in these areas. Although not required by contract it is highly advisable that the prime contractor require subcontractors who will be performing major or critical features of work to submit their QC plans which would then become a supplemental plan to the primes. If not known at the time of preparation of the initial plan, indicate what work may be subcontracted and that the plan will be supplemented later to outline CQC procedures in these areas.

4. Guidance on Preparation of the Plan:

a. General: Organize the plan as follows.

(1) Using a three-ring binder or folder, show contract number, short title of the contract, station or location, and contractor's name on the front face of the binder or folder.

Exhibit 12*2. Guidelines for Preparing a CQC Plan (Cont'd).

(2) Table of contents.

(3) Revision sheets. Changes or additions to the plan should be described and the ACO acceptance date shall be shown.

(4) The organization chart.

(5) Qualifications of the CQC personnel. (Resumes)

(6) Copy of the contractor's letter of authority to the CQC Chief signed by a responsible officer of the firm.

(7) Copy of the CQC Chief letter of direction to each CQC representative outlining his duties and responsibilities, which shall be endorsed as receipt, acknowledged by the representative.

(8) Four-phase inspection system implementation - discuss how this will be achieved.

(9) List phases of work for which the four-phase inspection system will be implemented.

(10) List of tests to be performed and frequency of each.

(11) Subcontracted work and QC procedures.

(12) Sample of daily CQC Reports and various test reports.

(13) Procedures for scheduling and managing submittals and certifying submittals.

b. The Quality Control Organization - The proposed QC organization will reflect how much thought has been given to staffing the project with adequate personnel to control the work. The quality control Chief will normally be supported by additional QC personnel depending on project size and complexity. Careful consideration must be given in the selection of those personnel to ensure that they are qualified to perform their duties. For the development of the organization it is highly advisable to designate a CQC Chief Assistant (back-up) in case of illness or vacation absences of the designated Chief.

c. The Organization Chart - Should show names and relationships of QC Staff elements and the relationship of the QC organization to other elements of authority from an officer of the firm directly to the CQC Chief and to all other elements of the quality control organization including subcontractors. It should show the relationship of the CQC Chief to the job Superintendent and/or Project Manager. An overall project organization chart showing inter-relationship of all contractor staff elements should be provided. It should reflect, if intended, areas in which QC personnel may be involved in the performance of other non-QC type duties. If personnel have not been selected to fill all positions within the QC organization at the time of submitting the plan, provide projected dates for filling these vacancies on the chart. Submit revisions with resumes to the plan later for ACO acceptance of personnel filling those positions.

Exhibit 12*2. Guidelines for Preparing a CQC Plan (Cont'd).

d. Qualifications of Personnel - Now that the QC organization has been structured with relationships provide resumes of proposed personnel endorsed by them, which specifically demonstrate their qualifications to perform assigned duties. Be advised that the Corps expects only qualified personnel to perform functions within the QC organization. This is not an area to train personnel in fields of construction new to them. If the contract requires specific prerequisites qualifications/experience of any QC staff members then they must be met unless the contractor can reasonably show that the proposed individual can satisfactorily perform the required function, then the ACO may consider acceptance conditioned on satisfactory performance.

e. Authority and Area of Responsibility - With an organization adequately sized with qualified personnel you now need to delegate authority and areas of responsibility. It is not uncommon to find QC personnel who have been assigned other responsibilities in addition to their QC assignment. BE CAREFUL, dual assignments in both QC and other project staff duties historically are not successful as they will eventually lead to conflicts in duties to the overall detriment of CQC performance. When this occurs it is usually at the expense of the contractor due to rework efforts and contract delays. If dual assignments are intended be sure that the QC Rep can satisfactorily perform the dual role. If not, he may eventually be replaced through adverse Corps action only because the contractor has unfairly assigned him more and conflicting responsibility than he can satisfactorily perform. Also, be sure that in delegating responsibilities you have covered all areas thoroughly. Areas to be considered are:

(1) Maintenance of the working plans/specifications by posting all change orders, shop drawing, deviations, clarifications, etc., promptly.

(2) Maintenance of as-builts.

(3) Scheduling and conducting the preparatory and initial inspections for each major phase or definable feature of work. Should include reporting responsibilities.

(4) Scheduling and conducting the preparatory and initial inspections for each major phase or definable feature of work. Should include report responsibilities.

(5) Follow-up inspections for each phase of work. Should include reporting responsibilities and deficiency correction procedures.

(6) Testing/laboratory operations:

(a) All equipment must be satisfactory for proper testing.

(b) Test equipment must be properly certified.

(c) Laboratory must have copies of all required test procedures.

(d) Lab technicians should be familiar with and should demonstrate ability to perform specified tests.

Exhibit 12*2. Guidelines for Preparing a CQC Plan (Cont'd).

(e) Proper test forms are used.

(f) Testing must be performed timely and test results will be submitted showing all detailed information regarding location of test, results, and specification requirement. Test reports should be stamped in bold letters "PASSED", "FAILED", "RETEST". Retest location must be easily reconciled with the original location of test failure.

(7) Verification of materials as they arrive on site to insure that the materials delivered are the same as approved and stored properly. QC Reps should also be responsible to assure that during and after installation of pre-finished items, such as countertops, tile, cabinets, furniture, mechanical and electrical equipment, etc., that these are properly protected.

(8) Interface between all QC personnel and project management staff shall be clearly defined. For example, prior to placing slab-on-grade the QC rep directly responsible for this phase of work must coordinate with QC reps responsible for underground plumbing /electrical utilities, the laboratory for density compliance on fill and scheduling concrete testing and project management staff to insure that the foremen and workmen understand requirements, etc.

(9) Conduct off-site QC inspections. Off-site QC inspections are highly recommended where equipment or materials are critical to completion, satisfactory functional performance, or where a large number of identical items are to be manufactured. An off-site QC inspection could prevent major delays and costly fixes to field modify items to meet contract requirements.

f. Methods of accomplishing quality control inspections - Minimum management/inspection efforts essential for good QC/QA are as follows and are based on the required four-phase inspection system.

(1) Preparatory Phase: The Preparatory PHASE starts when the contractor makes his bid take off (he must interpret the specifications and plans and decide what will meet them) and ends with the commencement of a representative portion of each definable feature work. The Preparatory Phase is NOT just one single meeting at a specific time but rather a series of events. The first formal meeting of the preparatory phase should establish an understanding between CQC and QA on contract requirements. CQC personnel should request this meeting in order to assure themselves that they have reached an agreement with government personnel as to what is required. A detailed record of the preparatory inspection meeting is required to be submitted with the QC daily report to reflect the agreed on procedures and controls. See **Attachment No. 1** for guidance in the preparation and reporting. Once this agreement is reached (it may take several meetings and shifting on both sides). CQC is ready to meet with the contractor's FIELD staff. Once field supervisory staff have been informed of the construction requirements, formal instructional periods are held with WORK CREWS in order to "pass the word". In many cases, work crews are not informed of specified requirements. THE CONTRACTOR MUST reach down into these crews if he wants the job done right the FIRST TIME.

The Contractor selects any and all means necessary to instruct the affected work crews (photos, sample panels, printed data, etc.)

Exhibit 12*2. Guidelines for Preparing a CQC Plan (Cont'd).

(2) Initial Inspection: CQC, QA and supervisory staff "look over the workman's shoulders" as they start actual construction in order to satisfy themselves that agreements and instructions are being carried out. Again, during this phase, it is not unusual to re-evaluate prior agreements based on factors not known or considered during the preparatory phase. It is essential that all members of the QC staff involved in this phase of work and preceding work be in attendance. See **Attachment No. 2** for guidance on reporting results of this inspection.

(3) Follow-up Inspection: Follow-up Inspections are performed frequently enough to ensure that the agreed on procedures and quality of work resulting from the preparatory and initial phases of inspection continue. Emphasis during this phase of inspection should be on:

(a) Workmanship

(b) Changes/additions to work crews. Ensure that new crews/workers have been informed, PASS-THE-WORD.

(c) Equipment/materials are approved.

(d) Required QC testing is being performed at the specified frequency and results are satisfactory.

When deficiencies are found three things must be done:

(a) Deficiency corrected promptly

(b) Documentation

(c) Determine cause of deficiency and correct situation to prevent a repetition of error.

(4) FINAL INSPECTION - Upon completion of all work or any increment thereof a completion inspection shall be conducted and a punch list developed of items which do not conform to the approved plans and specifications. The punch list with dates for completion will be included with the QA Daily Report.

Exhibit 12*2. Guidelines for Preparing a CQC Plan (Cont'd).

f. Construction Deficiency Tracking Procedure: Due to the scope of most Corps contracts the number of QC Reps being supervised, extended leave absences, personnel turnover, changes in assignments, simple oversight, etc., known construction deficiencies are frequently not followed through in a timely manner. What was originally a relatively simple corrective measure becomes quite complex and sometimes results in contractor requesting to compromise quality for progress. This is an unfavorable position for the contractor to be in as it reflects poorly on contractor QC performance. Therefore, a tracking procedure of construction deficiencies for the prevention of these adverse situations is a must. The intent is for the contractor to develop a Form for logging all deficiencies noted by both QC and QA Reps, which are not corrected on the date, observed. Suggested guidance in the contents of this log might be; reference to QC Report No. Providing details, short description of deficiency; location by facility, road station, etc.; if issued, date and number; date corrective action complete; and QC Report number recording QA acceptance of fix.

g. Testing (laboratory and other on-site testing). The testing portion of the QC Plan should be developed by utilizing results from the testing tabulation earlier. All testing requirements must be listed, individuals held responsible for coordination and conducting, frequency of test should be shown and whether by contractor or independent laboratory. A list of equipment must be furnished with dates of last calibration. If unknown at time of plan development this information can be furnished at time of receipt. Legible copy of forms to be used during laboratory and other on-site testing should be attached. If not prepared, these forms could be addressed during the preparatory inspection meeting.

h. Storage and Handling: A good QC Plan will address storage and handling procedures. Contractors have experienced great losses due to improper storage and handling. Rebar improperly stored results in unnecessary additional cost to remove rust, factory furnished items such as anodized aluminum door/window frames, furniture, cabinets, sealant mechanical/electrical equipment, etc., will if improperly stored and handled result in added cost and delays. A good plan and procedure will help to minimize these costs and delays. An ounce of prevention is better than a pound of cure.

i. Method of Documentation: Contract Section C, paragraph 3.4, provides minimum guidelines for daily CQC reporting. Where several QC personnel are members of the organization it is acceptable and preferred that each member complete his own daily report which becomes a feeder report to the QC Chiefs compiled report. The contractor's report must be fully documented as to work-in-place, inspections, and tests made, results thereof, dimensional checks, equipment and material checks. The report must be factual and complete. If inspections or tests are not reported, it must be assumed that none were made.

Consequently, failure to report CQC activities reflects poorly on the CQC organization and could result in an unsatisfactory rating and withholding of earnings.

Exhibit 12*2. Guidelines for Preparing a CQC Plan (Cont'd).

ATTACHMENT NO. 1 to EXHIBIT 12*2

FORMAT FOR PREPARATORY INSPECTION AND REPORTS

1. Identify phase of work by TP section, drawing sheet numbers, or other identification and the location of the work covered by this preparatory inspection.

2. List attendees including representatives of related trades.

3. Has each specification, paragraph, drawing, and shop drawing detail been studied?

4. List the submittals involved in this phase of work. Have all items been approved? Were any deviations approved?

5. Are all materials on the job site?
a. Have all materials been checked for contract compliance against approved shop drawings?
b. List items not on hand or not in accordance with transmittals.

6. List tests required by the TP section(s).

7. Accident Prevention preplanning- hazard control measures?

8. Have procedures for accomplishing the work been reviewed with the appropriate people?

9. Has all preliminary work been accomplished in accordance with contract requirements and is this segment of work ready to start?

10. Ensure that all differences have been resolved between contractor, sub-contractor, QC staff and QA personnel before proceeding.

11. Corps of Engineers' comments during preparatory inspection by name.

12. CQC, Chief signature on report.

Exhibit 12*2. Guidelines for Preparing a CQC Plan (Cont'd).
Attachment 1. Format for Preparatory Inspection and Reports.

ATTACHMENT NO. 2 to EXHIBIT 12*2

FORMAT FOR INITIAL INSPECTION AND REPORTS

1. Identify phase of work by TP section or other and the exact location of the work reviewed at the initial inspection.

2. List attendees including representatives of related trades.

3. Ensure that materials/equipment reviewed and approved at the preparatory inspection are the same as those intended for use and are on site.

4. List any proposed deviation if not previously approved.

5. Is the method of construction and the equipment intended to be used, the same as that approved.

6. Who will be responsible for follow-up inspections, on the QC staff?

7. Ensure that all differences have been resolved between contractor, sub-contractor, QC staff and QA personnel before proceeding.

8. Corps of Engineers' comments during initial inspection by name.

9. Ensure that the level of acceptable workmanship is established.

10. Ensure that all contractor personnel involved understand, that if at anytime the level of acceptable workmanship falls below that previously established, they will be required to correct the deficiency and conduct another initial inspection.

11. CQC, Chief signature on report.

Note: Frequently a number of initial inspections may occur before the acceptable level of quality is agreed upon. A report should also be prepared resulting from negative initial inspections as well.

Exhibit 12*2. Guidelines for Preparing a CQC Plan (Cont'd).
Attachment 2. Format for Initial Inspection and Reports.

Topics for Training Session	Projected Date	Instructor	CD-QA Assistance Requested

Exhibit 12*3. Training Schedule.

QUALITY ASSURANCE INSPECTION PROCEDURES

Inspection Procedure - All major installations and/or construction sites will be visited, as a minimum, on a semi annual basis. More frequent inspections will be conducted as conditions dictate. Resident Office will normally be advised of Construction Directorate (CD) inspections at least five (5) working days prior to visits.

Entrance interviews will be conducted with RE's or their authorized representative during which the information contained within the CD Briefing Report will be reviewed and evaluated on it's accuracy. QC/QA staffing will also be reviewed as will office automation and procedures.

After the entrance interview field personnel will assist in conducting on-site inspections and should be prepared to discuss all aspects of inspected work including QC/QA management techniques. Contractor field QC personnel should be prepared to participate in inspections if requested. Noted repetitive deficiencies will trigger a more in-depth review of QC/QA records in order to identify management needs.

After the field investigations a more in-depth office evaluation may be conducted depending on the number and/or severity of noted deficiencies. Office investigation will be comprised of a complete review of the affected contract file including QC/QA documentation and where required a review of contract administration procedures.

During the exit interview all noted deficiencies (along with recommended corrective actions) will be reviewed in detail with the Resident Engineer. The Resident Engineer will be given the opportunity to provide verbal or written responses, which will be included in the CD's written field report. The Resident Engineer will be given a rough, handwritten report of findings at the exit interview.

A written field evaluation report will be prepared within seven (7) working days by the CD inspector(s) after return to the CD Office. This report will be routed through the CD staff with copies to appropriate field offices(s). Where required in the report the field office will provide a written response back to the CD within fourteen (14) working days after receipt.

Follow-on or subsequent quarterly inspections will verify that corrections have, in fact, been taken on previously documented deficiencies.

Construction Policy - See Construction Policy No. CP-1-1, Construction Management Assistance (CMA) Program, for the formal policy concerning the above types of visits.

Exhibit 12*4. Quality Assurance Inspection Procedures.

PROCEDURES FOR MANAGING RFI's

1. Procedures for Managing Requests for Information (RFI's):

In view of the technical complexity of the CSDP, it is necessary to manage the configuration of the design, Construction, Equipment Acquisition/Installation, Systemization, Operations, and Closure for all CSDP facilities. Configuration Management (CM) is specified in the CM Plan. These procedures do not override that plan, but are to establish an administrative process for the receipt, review and reply to contractor-initiated RFI.

Contractors are responsible to comply with the contract documents and to provide the product/facilities in accordance with the documents. This implies or requires compliance with the configuration (Baseline) on which the contract award is made. The government is responsible to verify contract compliance with the current documents and current configuration. The government accomplishes verification through reviews and Quality Assurance (QA) procedures. The contractor accomplishes compliance through Quality Control (QC) procedures. Total Quality Management (TQM) is a Contractor/Government Partnership.

Contractor-initiated RFI's, submitted in accordance with contract requirements, will be processed in accordance with these instructions.

2. Procedures for Managing Requests for Clarifications:

CM is the discipline applying technical and administrative direction and surveillance to (1) identify and document the functional and physical characteristics of a configured item, (2) control changes to those characteristics, (3) record and report change processing and implementation status, and (4) verify compliance of change implementation.

The CM processes are described in the referenced CM Plans. Those procedures recognize that the contractor will make requests for clarifications and the contract requires the following:

a. The SC will require clarifications, request deviations and substitutions, and discover discrepancies as a consequence of the review of drawings, plans, or procedures. The SC shall request such clarifications by issuing to the Government a RFI.

b. A RFI will only submit/present a request for information. A RFI <u>will</u> <u>not</u> be used to revise a contract. If the Government determines that a response will revise or change any contract requirement, the Engineering Change Proposal (ECP) and contract modification processes must be used. Those processes are outlined in Section 7 Contract Administration.

c. Reviewers, generally, will be Resident Office, CEHNC, PMCD, or Design Personnel designated in the Resident Office procedures and those qualified in technical disciplines. See Attachment 1 to this Exhibit for guidance on contract interpretation. If the review requires contract interpretations, other than technical requirements, or if the technical requirements are not clear, CEHNC Construction Directorate will coordinate inquiries with CEHNC Office of Counsel or other organizations as appropriate.

Exhibit 12*5. Procedures for Managing RFI's.

d. Under no circumstances shall a RFI be used in lieu of an ECP. Where there will be an additional cost to the Government or where an ECP is required, a RFI shall not be used as the basis for a claim under any FFP portion of this contract.

e. For the phases other than construction, an assessment of any new work shall be made to determine whether it would be within or outside of the existing baseline.

3. Procedures for Managing Management Plan.

Contractor RFI's will be processed in accordance with the specific details of the Resident Engineer's site specific plan. Plans must consider the following specific requirements:

a. The RFI review and reply process will follow the process depicted on the attached Flow Diagram (Attachment 2) developed for the Anniston Project. Follow-on projects will follow a similar procedure, and develop an Office Management Plan. Some minor adjustments may be made based on mutual agreement between the Resident Engineer and the PMCD site manager.

b. In the event a RFI leads to an ECP and necessary change to other than Phases II, III, or IV of the contract, the PCO representative on the site shall be responsible for any necessary contract modification.

c. All RFI's will be submitted on a contractor-developed standardized form as specified in the contract.

d. The RFI log shall identify those RFI's that become ECP's.

Exhibit 12*5. Procedures for Managing RFI's (Cont'd).

Attachment 1 to Exhibit 12*5

CONTRACT INTERPRETATION

This information is presented to provide general guidance on the basic rules for contract interpretation as an aid in processing RFI's. The information also outlines the Contractor's contractual responsibilities to coordinate the work. Understanding the rules of contract interpretation is essential to prevent claims and misunderstanding.

1. Contract Interpretation.

It is virtually impossible for a set of drawings and specifications to spell out every aspect of the work on a complex construction project. Numerous Government contract performance problems and controversies stem from disagreements about the precise scope of the Government-Contractor Bargain -- The Contract. The complexity of Government projects, particularly those like the Chemical Stockpile Disposal Program (CSDP), the formality of procedures used in contract formation and the lengthy contract documents and specifications which are present in the CSDP Systems contracts, provide fertile ground for contract interpretation controversies. Resolution of these disputes or performances questions, will determine the amount or quality of work to be performed, the price to be paid, or the party who bears the responsibility for various events which may occur. Thus, an understanding of the rules and procedures used in the interpretation process is essential, not only for resolving controversies and disagreements but also for all parties to appreciate the significance of words and acts transpiring during contract formation and performance and their relationship of such to words in the contract document. Moreover, actions under, and the interpretations of, a given contract may impact obligations under future contracts.

The entire process of determining what the parties agreed to in their bargain is referred to as Contract Interpretation. This process involves determining the meaning of words, supplying missing terms and filling in gaps, resolving ambiguities, and sometimes ruling that parties are bound to perform in a manner which appears to be contrary to the words of the contractual documents. Courts and boards follow no predetermined, well-defined analytical framework work when giving a contract meaning through the interpretive process. A generally useful approach, however, is to first seek to ascertain the parties' intent. Courts and boards do this by looking to two sources of information examined sources under various rules of interpretation intended to ensure that contract language is not given a distorted meaning: (1) The language in the contract documents, and (2) evidence extrinsic (outside) to contract documents, pertaining to facts and circumstances surrounding contract formation and performance.

When analysis of intent-determinative information fails to compel an interpretation, courts and boards invoke other methods to resolve interpretation issues. Rules calling for interpretation of the document against the drafter and imposing a "duty" to seek clarification on the contractor allocate risks of contractual ambiguities by resolving disputes in favor of the party least responsible for the ambiguity. If these rules are inapplicable, an objective standard (similarly situated reasonable contractor) may be used to give a contract its legally enforceable meaning.

Exhibit 12*5. Procedures for Managing RFIs (Cont'd).

Attachment 1. Contract Interpretation (Cont'd)

Lacking a rigid method for interpretation, courts and boards can and do begin the interpretive process at any of the above steps. If a "clear" interpretation is found, analysis ends; otherwise a circuitous evaluation of the other factors may ensue. It should be noted that interpretation issues are matters of law. Thus, courts are not bound by board analysis and interpretive conclusions.

2. Basic Objective. The basic objective of contract interpretation is to determine the intent of the parties. The basic objective of this guidance is two-fold: (1) to provide general background and guidance on the principles of contract interpretation and (2) to provide administrative guidance and procedures for processing contractor-initiated Requests for Information (RFI). This guidance is not intended to circumvent the involvement of the Division Counsel in their legal role related to contract interpretation. This exception is understandable in view of the complicated legal principles and processes of contract law. Secondly, it is not intended that this guidance override or conflict with the requirements of Configuration Management Plans.

3. Definition of Contract Terms. Terms and symbols contained in contract documents must be given some meaning in the interpretive process. Generally, the legal rules are followed unless a different intention is manifested;

(a) Where language has a generally prevailing meaning, it is interpreted in accordance with that meaning;

(b) Technical terms and words of art are given their technical meaning when used in a transaction within their technical field.

For general phrases, dictionaries or common knowledge may provide a meaning. Case law and regulations may also be examined. Definitions of words and symbols, which have acquired special, non-standard dictionary or technical meanings, may be found in trade publications or derived from trade practice and usage. There are two broad sources of technical terms and words of art in Government contracts: the technical language of various industries and trades and the technical language of Government forms. The written contract document is the primary evidence of the parties' agreement. A thorough analysis of the provisions actually included and incorporated by reference is essential to properly resolve these issues.

4. Contract Clauses. It is frequently impossible to make an interpretation, which gives a reasonable effect to all parts of a contract document. Government contract documents are long, complex, and contain many clauses, which are drafted independently of each other. When two or more clauses are in direct conflict, the conflict may be resolved by one of the interpretations rules establishing an order of precedence. CSDP contracts contain specific provisions dealing with the order of precedence. The clause provides:

"Any inconsistency in this solicitation shall be resolved by giving precedence in the following order: (a) the schedule (excluding the specifications); (b) representations and other instructions; (c) contract clauses; (d) other documents, exhibits, and attachments; and (e) the specifications."

(FAR 52.215-33)

Exhibit 12*5. Procedures for Managing RFIs (Cont'd).

Attachment 1. Contract Interpretation (Cont'd)

The preceding clause is included since the contract is negotiated. However, in view of the Construction Phases, which is Firm-Fixed-Price (construction Sub-Contract), additional precedence provisions are included. The basic provision is provided in FAR 52.236-21;

"52.236-21 Specifications and Drawings for Construction

SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (APRIL 1984)

(a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of the discrepancy in the figures, in the drawings, or in the specifications, the specifications govern. In case of a discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

(b) Wherever in the specifications or upon the drawings the words "directed," "required," "ordered," "designated," "prescribed," or words of like import shall be understood that the "direction," "requirement," "order," "designation," or "prescription," of the Contracting Officer is intended and similarly the words "approved," "acceptable," "satisfactory," or words of like import shall mean, "approved by," or "acceptable," or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.

(c) Where "as shown," "as indicated," "as detailed," or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The work "provided" as used herein shall be understood to mean "provide complete in place," that is, "furnished and installed."

(d) Shop drawings mean drawings, submitted to the Government by the Contractor, subcontractor, or any lower tier subcontractor pursuant to a construction contract, showing in detail (1) the proposed fabrication and assembly of structural elements, and (2) the installation (i.e., fit, and attachment details) of materials and equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustration, schedules, performance and test data and similar materials furnished by the contractor to explain in detail specific portions of work required by the contract. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

Exhibit 12*5. Procedures for Managing RFIs (Cont'd).

Attachment 1. Contract Interpretation (Cont'd)

(e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted, shall indicate the Government's reasons therefor. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.

(f) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such variation, the Contracting Officer shall issue an appropriate contract modification, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.

(g) The Contractor shall submit to the Contracting Officer for approval, four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated) of all shop drawings, will be retained by the Contracting Officer and one set will be returned to the Contractor.

(h) This clause shall be included in all subcontracts at any tier."

This clause state: "In case of difference between drawings and specifications, the specifications shall govern."

The inclusion of these clauses has the advantage of permitting relatively mechanical resolution of a conflict. However, as a result of their application, there is no assurance that the decision reached will reflect the intent of the parties. The parties have simply agreed in their contract that the specifications shall govern.

Based on experience, other specific contract clauses have been developed and included in the contract. These, in general, are:

(1) <u>CONTRACT DRAWINGS, MAPS, and SPECIFICATIONS</u>

(a) Two sets of full-size contract drawings, and one set of CAD tapes will be furnished the successful offeror without a charge, except applicable publications incorporated into the technical provisions by reference. The successful offeror will also be furnished (1) one set of reproducible of the contract drawings, (2) fifteen (15) sets of specifications, and (3) fifteen (15) sets of half-size drawings. The work shall conform to the specifications and the contract drawings listed in the technical provisions.

Exhibit 12*5. Procedures for Managing RFIs (Cont'd).

Attachment 1. Contract Interpretation (Cont'd)

(b) Omissions from the drawings or specifications or the mis-description of details of work which are manifestly necessary to carry out the intent of the drawings and specifications, or which are customarily performed, shall not relieve the successful offeror from performing such omitted or mis-described details of the work but they shall be performed as if fully and correctly set forth and described in the drawings and specifications.

(c) The successful offeror shall check all drawings furnished him immediately upon their receipt and shall promptly notify the Contracting Officer of any discrepancies. Figures marked on drawings shall in general be followed in preference to scale measurements. Large-scale drawings shall govern small-scale drawings. The successful offeror shall compare all drawings and verify the figures before lying out the work and will be responsible for any errors which might have been avoided thereby.

(2) Equipment Layout Drawings

The Contractor shall submit layout drawings in plan and necessary elevation, of all mechanical, electrical, heating, and ventilating equipment space(s) showing the proposed equipment, duct work, piping, conduits, etc., with clearances, for approval of the Contracting Officer, whether or not such layout drawings are specified under the various technical sections of the specifications. In spaces having more than one type of equipment, the layout drawings shall indicate the composite arrangement of all types of equipment and all associated work with all clearances. The layouts of equipment and associated work shall provide adequate and acceptable clearances for entry, servicing, and maintenance. The submittal and approval of equipment layout drawings shall conform to the requirements as before specified for shop drawings. Should the Contractor propose to furnish any equipment or standard products requiring allocations of space, or electrical, mechanical, or piping connections thereto, or supports different from those shown or indicated on the plans or in the specifications, he shall prepare and submit full detail drawings to the Contracting Officer for approval showing all changes. The approved detailed drawings shall become a part of the contract and any changes in the construction resulting from revisions in the details and dimensions on the drawings which are required by the substitution of alternate equipment and/or products shall be made at the expense of the Contractor.

(3) LAYOUT OF WORK (Apr 1984) FAR 52.236-17

The Contractor shall lay out its work from Government established base lines and bench marks indicated on the drawings and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting officer until authorized to remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due to become due to the Contractor.

Exhibit 12*5. Procedures for Managing RFIs (Cont'd).

Attachment 1. Contract Interpretation (Cont'd)

The preceding clauses are provided to set the foundation for timely resolution of conflicts and to aid in the contract administration process. Some very basic rules are established:

a. In case of difference between drawings and specifications, the specifications shall govern.

b. "Large Scale" drawings control over "Small Scale" drawings.

c. Figures marked on drawings shall in general be followed in preference to scale measurements.

d. The contract will be read as a whole.

e. Specific terms control over general terms.

f. Specifications and drawings are read together.

g. Performance specifications control.

h. The contract language is presumed to express the intent of the parties.

i. Ambiguity: Is "uncertainty of meaning..." Is more than mere disagreement.

j. Ambiguous language will be construed against the drafter.

5. Requests for Clarifications. During contract formation or early in the performance of a contract the contractor or the Government may become aware of an apparent ambiguity or that the other party's interpretation differs from his own. In these circumstances, it is common for one party to specifically request the other party to clarify its interpretation of the terms in question. Solicitation provisions and regulations provide procedures to be followed by bidders and government officials in dealing with requests for clarification submitted in the pre-bid or proposal stage of acquisition.

It is not intended for this discussion to address any issues related to pre-bid or contract formation. Rather, these procedures are to establish an administrative process after contract award.

Exhibit 12*5. Procedures for Managing RFIs (Cont'd).