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NAVFAC IGS-01450 (MAY 2002)  
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Preparing Activity: LANTNAVFACENGCOM Based on UFGS-01450N

ITALIAN GUIDE SPECIFICATIONS

Use for ITALIAN projects only

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01450

QUALITY CONTROL (FOR ITALY)  
05/02

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NOTE: This guide specification is issued by the Atlantic Division, Naval Facilities Engineering Command for regional use in Italy.

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NOTE: This guide specification covers the requirement for Quality Control (QC) for all projects in Italy. Consult the EFD/EFA/OICC Construction Quality Management (CQM) Staff for appropriate QC specialist modifications. This section , when used for projects with a estimated construction cost in excess of a million dollars, shall be reviewed (in a marked-up format) and approved by the CQM Staff at the 100 percent design submission.

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Comments and suggestion on this specification are welcome and should be directed to the technical proponent of the specification. A listing of the technical proponents, including their organization designation and telephone number, is on the Internet.

Use of electronic communication is encouraged.

Brackets are used in the text to indicate designer choices or locations where text must be supplied by the designer.

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PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the

basic designation only.

ENTE NAZIONALE ITALIANO DI UNIFICAZIONE (UNI)

UNI CEI EN 45002	General Criteria for the Evaluation of Testing Laboratories
UNI CEI EN 45003	General Criteria for Laboratory accreditation Agencies
UNI CEI EN 45014	General Criteria for Certificates of Compliance Issue By a Supplier

Italian Law (LAW)

LAW 1086	Legge 5/11/1971, Norms for Works in Reinforced Concrete and Steel and Application Instructions
LAW 55/90	Safety and Health Requirements

U.S. ARMY CORPS OF ENGINEERS (USACE)

COE EM 385-1-1	(1996) Safety and Health Requirements Manual
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1.2 SUBMITTALS

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NOTE: Submittals must be limited to those necessary for adequate quality control. The importance of an item in the project should be one of the primary factors in determining if a submittal for the item is required.

A "G" following a submittal item indicates that the submittal requires Government approval. Some submittals are already marked with a "G". Only delete an existing "G" if the submittal item is not complex and can be reviewed through the Contractor's Quality Control system. Only add a "G" if the submittal is sufficiently important or complex in context of the project.

For submittals requiring Government approval on Army projects, a code of up to three characters within the submittal tags may be used following the "G" designation to indicate the approving authority. Recommended codes for Army projects are "RE" for Resident Engineer approval, "ED" for Engineering approval, and "AE" for Architect-Engineer approval. Codes following the "G" typically are not used for Navy projects.

Submittal items not designated with a "G" are considered as being for information only for Army projects and for Contractor Quality Control approval for Navy projects.

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Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-01 Preconstruction Submittals

QC Manager qualifications G, [\_\_\_\_].

Quality Control (QC) plan G, [\_\_\_\_].

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**NOTE: Coordinate the submittal requirement dates with the submittal dates in sections entitled "Construction Progress Documentation" or "Network Analysis Schedules." Use the bracketed language if a Preliminary Construction Schedule is specified in the specification section entitled "NETWORK ANALYSIS SCHEDULES".**

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Submit a QC plan within [20] [\_\_\_\_] calendar days after receipt of Notice of Award.

[The QC Plan shall include a preliminary submittal of the list of definable features of work that shall cover the first [90] [\_\_\_\_] days of construction.

Submit the completed list of definable features of work in conjunction with the Accepted Network Analysis Schedule.

Any approval by the Government of the QC Plan shall be considered to be "approved as noted, resubmittal required" and will be in effect only until the completed list of definable features of work is received and approved. If the completed list of definable features of work and accepted network schedule is not received within the time indicated in the paragraph entitled "Accepted Network Analysis Schedule" of Section 01321N "Network Analysis Schedules," the QC Plan will become disapproved and all work, except for the work authorized in the paragraph entitled "Preliminary Work Authorized Prior to Approval," will stop.]

### 1.3 INFORMATION FOR THE CONTRACTING OFFICER

Prior to commencing work on construction, the Contractor can obtain a single copy set of the current report forms from the Contracting Officer, or by calling the local EFD/EFA QA Coordinator for an electronic version of

the report forms. The report forms will consist of the Contractor Production Report, Contractor Production Report (Continuation Sheet), Contractor Quality Control Report, Contractor Quality Control Report (Continuation Sheet), Preparatory Phase Checklist, Initial Phase Checklist, Rework Items List, and Testing Plan and Log. Other reports referenced below may be in formats customarily used by the Contractor, Testing Laboratories, etc. and will contain the information required by this specification.

Deliver the following to the Contracting Officer:

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**NOTE: Delete the requirement for QC Specialist reports when QC specialists are not specified.**  
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- a. Contractor Quality Control Report; original and [1 copy] [\_\_\_\_] copies], by [10:00 AM] [\_\_\_\_] the next working day after each day that work is performed.
- b. Contractor Production Report: Original and [1 copy] [\_\_\_\_] copies], by [10:00 AM] [\_\_\_\_] the next working day after each day that work is performed, attached to the Contractor Quality Control Report.
- c. Preparatory Phase Checklist: Original attached to the original Contractor Quality Control Report and 1 copy attached to each copy.
- d. Initial Phase Checklist: Original attached to the original Contractor Quality Control Report and 1 copy attached to each copy.
- [e. QC specialist Reports: Originals and [1 copy] [\_\_\_\_] copies], by [10:00 AM] [\_\_\_\_] the next working day after each day that work is performed, attached to the Contractor Quality Control Report.]
- f. Field Test Reports: 2 copies, within 2 working days after the test is performed, attached to the Contractor Quality Control Report.
- g. Monthly Summary Report of Tests: 2 copies attached to the Contractor Quality Control Report.
- h. Testing Plan and Log, 2 copies, at the end of each month.
- i. Rework Items List: 2 copies, by the last working day of the month.
- j. QC Meeting Minutes: 2 copies, within 2 working days after the meeting.
- k. QC Certifications: As required by the paragraph entitled "QC Certifications."

1.4 QC PROGRAM REQUIREMENTS

Establish and maintain a QC program as described in this section. The QC program consists of a QC Organization, a QC Plan, a QC Plan Meeting, a Coordination and Mutual Understanding Meeting, QC meetings, three phases of control, submittal review and approval, testing, completion inspections, and QC certifications and documentation necessary to provide materials, equipment, workmanship, fabrication, construction and operations which comply with the requirements of this Contract.

The QC program shall cover on-site and off-site work and shall be keyed to the work sequence. No work or testing may be performed unless the QC Manager is on the work site. The QC Manager shall report to an officer of the firm and shall not be subordinate to the Project Superintendent or the Project Manager.

The QC Manager, Project Superintendent and Project Manager must work together effectively. Although the Quality Control Manager is the primary individual responsible for quality control, all three individuals will be held responsible for the quality of work on the job. The project superintendent will be held responsible for the quality of production.

1.4.1 Preliminary Work Authorized Prior to Approval

The only work that is authorized to proceed prior to the approval of the QC Plan is mobilization of storage and office trailers, temporary utilities, and surveying.

1.4.2 Approval

Approval of the QC Plan is required prior to the start of construction. The Contracting Officer reserves the right to require changes in the QC Plan and operations as necessary, including removal of personnel, to ensure the specified quality of work. The Contracting Officer reserves the right to interview any member of the QC organization at any time in order to verify the submitted qualifications. All QC organization personnel shall be subject to acceptance by the Contracting Officer. The Contracting Officer may require the removal of any individual for non-compliance with quality requirements specified in the contract.

1.4.3 Notification of Changes

Notify the Contracting Officer, in writing, of any proposed change, including changes in the QC organization personnel, a minimum of seven calendar days prior to a proposed change. Proposed changes shall be subject to acceptance by the Contracting Officer.

1.5 QC ORGANIZATION

1.5.1 QC Manager

1.5.1.1 Duties

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**NOTE: Remove the bracketed phrases when QC specialists are not specified.**

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Provide a QC Manager at the work site to implement and manage the QC program. The only duties and responsibilities of the QC Manager are to manage and implement the QC program on this contract. The QC Manager shall not be designated as the safety competent person as defined by COE EM 385-1-1 or LAW 55/90.

The QC Manager is required to attend the QC Plan Meeting, attend the Coordination and Mutual Understanding Meeting, conduct the QC meetings, perform the three phases of control [except for those phases of control designated to be performed by QC specialists], perform submittal review and approval, ensure testing is performed and provide QC certifications and documentation required in this contract.

The QC Manager is responsible for managing and coordinating the three phases of control and documentation performed by [the QC specialists,] Testing Laboratory personnel and any other inspection and testing personnel required by this Contract.

No work or testing may be performed unless the QC Manager is on the work site. The QC Manager shall report directly to an officer of the firm and shall not be the same individual as nor be subordinate to the Project Superintendent or the Project Manager. The QC Manager shall also be completely bi-lingual: Italian and English. All correspondence, certification and documentation shall be written in English.

#### 1.5.1.2 Qualifications

The QC Manager shall be an Engineer or Architect regularly registered on the National Professional Rolls of Italy with a minimum of 10 years experience as a superintendent, QC Manager, project manager, or construction manager on similar size and type construction contracts which included the major trades that are part of this Contract. The individual must be familiar with the requirements of COE EM 385-1-1 and LAW 55/90, and have experience in the areas of hazard identification and safety compliance.

As an alternative to the above, the QC Manager may be a Registered Geometer (Italian Geometra) with a minimum of fifteen (15) years experience as described above. Submit QC Manager qualifications for approval.

#### 1.5.1.3 Construction Quality Management Training

In addition to the above experience and education requirements, the QC Manager shall have completed the course entitled "Construction Quality Management for Contractors." This course is periodically offered by ROICC Northern Italy at Aviano AFB.

#### 1.5.2 Alternate QC Manager Duties and Qualifications

Designate an alternate for the QC Manager at the work site to serve in the event of the designated QC Manager's absence. The period of absence may not exceed two weeks at one time, and not more than 30 workdays during a

calendar year. The qualification requirements for the Alternate QC Manager shall be the same as for the QC manager.

[1.5.3 Assistant QC Manager Duties and Qualifications

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NOTE: This option will rarely be used. Consider specifying an Assistant QC Manager only if this is a labor intensive project, a very complex project, a project with multiple work sites, or a project with multiple shifts.  
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NOTE: Delete the words "Assistant QC Manager" throughout this section when this paragraph is not used.  
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Provide a separate assistant to the QC Manager to perform the three phases of control, perform submittal review, ensure testing is performed, and prepare QC certifications and documentation required by this Contract. The qualification requirements for the Assistant QC Manager shall be an individual with a minimum of ten (10) years experience as a Superintendent, Inspector, QC Manager, Project Manager or Construction Manager on similar size and type construction Contracts which include the major trades that are a part of this Contract. The Assistant QC Manager shall be at least a registered geometer (Italian "geometra") or equivalent. The Assistant QC Manager shall also be completely Bilingual, Italian and English. All correspondence, certifications and documentation shall be in the English language.

]1.5.4 QC Specialists Duties and Qualifications

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NOTE: Only specify QC specialists for those areas of work of sufficient complexity or size that a specialist is required to supplement the QC Manager. Edit this paragraph and table for large or complex projects. The use of Registered Professional Engineers or Architects for QC specialists may be allowed in special cases, but only after consultation with and approval by the CQM Staff. When QC Specialists are required for specific periods of time, edit and use the optional column entitled "Frequency."  
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NOTE: Delete the words "QC specialists" throughout this section when this paragraph is not used.  
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Provide a separate QC specialist at the work site for each of the areas of

responsibilities specified below, who shall assist and report to the QC Manager and who may perform production related duties but must be allowed sufficient time to perform their assigned quality control duties. No work in these areas may commence prior to approval of the associated QC specialist. Each QC Specialist shall be bilingual in English and Italian. QC specialists are required to attend the Coordination and Mutual Understanding Meeting, QC meetings, and be physically present at the construction site to perform the three phases of control and prepare documentation for each definable feature of work in their area of responsibility at the frequency specified below.

Qualification/ Experience in Area Responsibility	Area of Responsibility	Frequency
[Mechanical Inspector, a certified mechanical inspector w/5 years minimum experience in this trade	Installation and testing of all HVAC equipment and general building construction	Full time during installation and testing of mechanical systems]
[Electrical Inspector, a certified electrical inspector, w/10 years minimum experience in this trade	Installation and testing of electrical work in accordance with general building and electrical codes	Full time during installation and testing of electrical system]
[Reinforced concrete inspector, an individual w/5 years experience in the manufacture and installation of reinforced concrete	Installation and testing of reinforced concrete construction, and general building construction	Full time during and testing of any reinforced concrete and slab construction]
[Roofing Inspector, roofing manufacturer's representative w/5 years experience in roofing construction]	Installation and testing of roofing systems	Full time during installation and testing of roofing systems

]1.5.5 Safety Specialist

Provide a Safety Specialist at the worksite to perform safety management, surveillance, inspections and safety enforcement for the contractor. The Safety Specialist shall be the safety "competent person" as defined by COE EM 385-1-1 and LAW 55/90. The Safety Specialist shall be at the worksite at all times whenever work or testing is being performed, shall conduct daily safety inspections and shall have no other duties other than safety management, inspections, and safety enforcement on this contract.

[1.5.6 QC Assistant

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**NOTE: Normally use this paragraph for a project requiring a large volume of submittals.**

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Provide an Administrative Assistant at the work site until the work has been accepted. The primary duty shall be to assist the QC Manager in processing and maintaining files for submittals, preparing and publishing reports and meeting minutes. After primary duties are accomplished, other duties may be assigned provided the duties do not interfere with primary duties.

## 11.6 QUALITY CONTROL (QC) PLAN

### 1.6.1 Requirements

Provide, for approval by the Contracting Officer, a QC plan submitted in a 3-ring binder with pages numbered sequentially that covers both on-site and off-site work and includes the following:

- a. A table of contents listing the major sections identified with tabs in the following order:
  - I. QC ORGANIZATION
  - II. NAMES AND QUALIFICATIONS
  - III. DUTIES, RESPONSIBILITY AND AUTHORITY OF QC PERSONNEL
  - IV. OUTSIDE ORGANIZATIONS
  - V. APPOINTMENT LETTERS
  - VI. SUBMITTAL PROCEDURES AND INITIAL SUBMITTAL REGISTER
  - VII. TESTING LABORATORY INFORMATION
  - VIII. TESTING PLAN AND LOG
  - IX. PROCEDURES TO COMPLETE REWORK ITEMS
  - X. DOCUMENTATION PROCEDURES
  - XI. LIST OF DEFINABLE FEATURES
  - XII. PROCEDURES FOR PERFORMING THE THREE PHASES OF CONTROL
  - [XIII. PERSONNEL MATRIX]
  - [XIV. PROCEDURES FOR COMPLETION INSPECTION]
- b. A chart showing the QC organizational structure.
- c. Names and qualifications, in resume format, for each person in the QC organization. Include the CQM course certifications for the QC Manager and Alternate QC Manager as required by the paragraphs entitled "Construction Quality Management Training" and "Alternate QC Manager Duties and Qualifications".
- d. Duties, responsibilities and authorities of each person in the QC organization.
- e. A listing of outside organizations such as, architectural and consulting engineering firms that will be employed by the Contractor and a description of the services these firms will provide.
- f. Letters signed by an officer of the firm appointing the QC Manager

and Alternate QC Manager and stating that they are responsible for implementing and managing the QC program as described in this contract. Include in this letter the responsibility of the QC Manager and Alternate QC Manager to implement and manage the three phases of quality control, and their authority to stop work which is not in compliance with the contract. The QC Manager shall issue letters of direction to [the Assistant QC Manager and] all other QC specialists outlining their duties, authorities, and responsibilities. Copies of the letters shall be included in the QC plan.

- g. Procedures for reviewing, approving and managing submittals. Provide the name[s] of the person[s] in the QC organization authorized to review and certify submittals prior to approval. Provide the initial submittal of the Submittal Register as specified in section entitled "Submittal Procedures."
- h. Testing laboratory information required by the paragraphs entitled "Testing Laboratory Requirements" or "Documentation for Laboratory Qualification", as applicable.
- i. A Testing Plan and Log that includes the tests required, referenced by the specification paragraph number requiring the test, the frequency, and the person responsible for each test.
- j. Procedures to identify, record, track and complete rework items.
- k. Documentation procedures, including proposed report formats.

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**NOTE: Use the bracketed phrase to make sure specific definable features are included in the QC plan. Consult with the CQM Staff on whether to include this bracketed phrase.**  
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- l. List of definable features of work. A definable feature of work (DFOW) is a task which is separate and distinct from other tasks, has the same control requirements and work crews. The list shall be cross-referenced to the contractor's Construction Schedule and the specification sections. For projects requiring a Progress Chart, the list of definable features of work shall include but not be limited to all items of work on the schedule. For projects requiring a Network Analysis Schedule, the list of definable features of work shall include but not be limited to all critical path activities.

[Include all activities for which this specification requires QC specialists or Specialty Inspection Personnel[, and the following specific definable features of work:].

- (a) [\_\_\_\_\_]
- (b) [\_\_\_\_\_]

- m. Procedures for Performing the Three Phases of Control. For each DFWO, provide the DFWO's Preparatory and Initial Phase Checklists. Each list shall include a breakdown of quality checks that will be used when performing the quality control functions, inspections, and tests required by the contract documents. The Preparatory and Initial Phases and meetings shall be conducted with a view towards obtaining quality construction by planning ahead and identifying potential problems for each definable feature of work.
- [n. A personnel matrix showing for each section of the specification who will review and approve submittals, who will perform and document the three phases of control, and who will perform and document the testing.]
- [o. Procedures for Identifying and Documenting the Completion Inspection process. Include in these procedures the responsible party for punch out inspection, prefinal inspection, and final acceptance inspection.]

1.7 QC PLAN MEETING

Prior to submission of the QC plan, meet with the Contracting Officer to discuss the QC plan requirements of this Contract. The purpose of this meeting is to develop a mutual understanding of the QC plan requirements prior to plan development and submission.

1.8 COORDINATION AND MUTUAL UNDERSTANDING MEETING

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**NOTE: Remove the first or second bracketed phrases when Assistant QC Manager or QC specialist options are not specified.**  
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After submission of the QC Plan, and prior to the start of construction, meet with the Contracting Officer to present the QC program required by this Contract. The purpose of this meeting is to develop a mutual understanding of the QC details, including documentation, administration for on-site and off-site work, and the coordination of the Contractor's management, production and QC personnel.

At the meeting, the Contractor will be required to explain in detail how three phases of control will be implemented for each definable feature of work. As a minimum, the Contractor's personnel required to attend shall include an officer of the firm, the project manager, project superintendent, QC Manager, Alternate QC Manager [Assistant QC Manager,] [QC specialists,] and subcontractor representatives. Each subcontractor who will be assigned QC responsibilities shall have a principal of the firm at the meeting.

Minutes of the meeting will be prepared in English by the QC Manager and signed by the Contractor, [the A/E] and the Contracting Officer. A copy of

the signed minutes shall be provided to all attendees by the Contractor. Repeat the coordination and mutual understanding meeting when a new QC Manager is appointed.

Provide a room acceptable to the Contracting Officer for the one day meeting. The room shall be equipped with VCR and monitor equipment, overhead projector and a flip chart. Submit the location, date and agenda for this meeting to the Contracting Officer for approval. A sample agenda follows:

Presented by:	Agenda Item	Allowed Time	Scheduled Time
ROICC & Contractor	Instructions	30 Min.	0800-0830
ROICC	QC Films	30 Min.	0830-0900
QC Manager	QC Plan, Presentation on each requirement	2 Hours	0900-1100
General Contractor	Example of QC Meeting (a) Agenda, (b) Checklist (c) Sample minutes (d) Three phases of control	1 Hour	1100-1200
ROICC	LUNCH (Working Lunch) Discussion of Submittal process	30 Min. 1.5 Hr.	1200-1230 1230-1400
General Contractor	Identification of long definable feature of work (From QC Plan)	1 Hour	1400-1500
ROICC	Comments on QC/ Production Reports	30 Min.	1600-1630

#### 1.9 QC MEETINGS

After the start of construction, the QC Manager shall conduct [weekly] QC meetings [once every two weeks] at the work site with the project superintendent [and QC specialists]. The QC Manager shall prepare the minutes of the meeting and provide a copy to the Contracting Officer within 2 working days after the meeting. The Contracting Officer may attend these meetings. The QC Manager shall notify the Contracting Officer at least 48 hours in advance of each meeting. As a minimum, the following shall be accomplished at each meeting:

- a. Review the minutes of the previous meeting;
- b. Review the schedule and the status of work:
  - (1) Work or testing accomplished since last meeting
  - (2) Rework items identified since last meeting
  - (3) Rework items completed since last meeting;

- c. Review the status of submittals:
  - (1) Submittals reviewed and approved since last meeting
  - (2) Submittals required in the near future;
- d. Review the work to be accomplished in the next [2] [\_\_\_\_\_] week[s] and documentation required:
  - (1) Establish completion dates for rework items
  - (2) Update the schedule showing planned and actual dates of the preparatory, initial and follow-up phases, including testing and any other inspection required by this contract
  - (3) Discuss construction methods and the approach that will be used to provide quality construction by planning ahead and identifying potential problems for each definable feature of work
  - (4) Discuss status of off-site work or testing
  - (5) Documentation required;
  - (6) Discuss upcoming Activity Hazard Analyses:
- e. Resolve QC and production problems:
  - (1) Assist in resolving Request for Information issues; and
- f. Address items that may require revising the QC plan:
  - (1) Changes in QC organization personnel
  - (2) Changes in procedures.
- g. Review health and safety plan

#### 1.10 THREE PHASES OF CONTROL

The Three Phases of Control shall adequately cover both on-site and off-site work and shall include the following for each definable feature of work.

##### 1.10.1 Preparatory Phase

Notify the Contracting Officer at least 2 work days in advance of each preparatory phase. This phase shall include a meeting conducted by the QC Manager and attended by [the QC specialists,] the superintendent, and the foreman responsible for the definable feature. Document the results of the preparatory phase actions in the daily Contractor Quality Control Report and in the Preparatory Phase Checklist. Perform the following prior to beginning work on each definable feature of work:

- a. Review each paragraph of the applicable specification sections;
- b. Review the Contract drawings;
- c. Verify that appropriate shop drawings and submittals for materials and equipment have been submitted and approved. Verify receipt of approved factory test results, when required;
- d. Review the testing plan and ensure that provisions have been made to provide the required QC testing;
- e. Examine the work area to ensure that the required preliminary work has been completed;
- f. Examine the required materials, equipment and sample work to ensure that they are on hand and conform to the approved shop drawings and submitted data;
- g. Discuss construction methods, construction tolerances, workmanship standards, and the approach that will be used to provide quality construction by planning ahead and identifying potential problems for each definable feature of work; and
- h. Review the safety plan and appropriate activity hazard analysis to ensure that applicable safety requirements are met, and that required Material Safety Data Sheets (MSDS) are submitted.

#### 1.10.2 Initial Phase

Notify the Contracting Officer at least 2 work days in advance of each initial phase. When construction crews are ready to start work on a definable feature of work, conduct the initial phase with [the QC Specialists], the superintendent, and the foreman responsible for that definable feature of work. Observe the initial segment of the definable feature of work to ensure that the work complies with Contract requirements.

Document the results of the initial phase in the daily Contractor Quality Control Report and in the Initial Phase Checklist. Repeat the initial phase for each new crew to work on-site, or when acceptable levels of specified quality are not being met. Perform the following for each definable feature of work:

- a. Establish the quality of workmanship required;
- b. Resolve conflicts;
- c. Ensure that testing is performed [by the approved laboratory], and
- d. Check work procedures for compliance with the Safety Plan and the appropriate activity hazard analysis to ensure that applicable safety requirements are met.

#### 1.10.3 Follow-Up Phase

Perform the following for on-going work daily, or more frequently as necessary until the completion of each definable feature of work and document in the daily Contractor Quality Control Report:

- a. Ensure the work is in compliance with Contract requirements;
- b. Maintain the quality of workmanship required;
- c. Ensure that testing is performed [by the approved laboratory];
- d. Ensure that rework items are being corrected; and
- e. Perform safety inspections.

#### 1.10.4 Additional Preparatory and Initial Phases

Additional Preparatory and Initial Phases shall be conducted on the same definable features of work if the quality of on-going work is unacceptable, if there are changes in the applicable QC organization, if there are changes in the on-site production supervision or work crew, if work on a definable feature is resumed after substantial period of inactivity, or if other problems develop.

#### 1.10.5 Notification of Three Phases of Control for Off-Site Work

Notify the Contracting Officer at least two weeks prior to the start of the preparatory and initial phases.

#### 1.11 SUBMITTAL REVIEW AND APPROVAL

Procedures for submission, review and approval of submittals are described in section entitled "Submittal Procedures."

#### 1.12 TESTING

All laboratory work under this Contract and documentation for laboratory qualification, shall comply with UNI CEI EN 45014, UNI CEI EN 45002, UNI CEI EN 45003, and Legge 5/11/1971, LAW 1086 and the additional requirements specified in this section. Except as stated otherwise in the specification sections, perform sampling and testing required under this Contract.

##### 1.12.1 Testing Laboratory Requirements

Provide an independent testing laboratory qualified to perform sampling and tests required by this Contract. All laboratory work under this Contract shall be performed by a laboratory approved by the Government. The basis of approval includes the following:

- a. Testing laboratories must be qualified by the Italian Government.
- b. Testing laboratories must verify their ability, in accordance with paragraph "Laboratory Inspection" below, to perform the required analyses.

#### 1.12.2 Documentation for Laboratory Qualification

Submit for Contracting Officer's approval, in writing, the following:

- a. Functional description of the laboratory's organizational structure, operational departments, and support departments and services.
- b. A list and resumes of the personnel assigned to the proposed testing, including the person charged with engineering managerial responsibility.
- c. Affidavit of compliance with the applicable Laws and certification that the laboratory performs work in accordance with technical requirements as required by the Contract specifications.
- d. A list of test and inspection equipment for each of the proposed test procedures and certification that the equipment is calibrated at prescribed intervals to insure the validity of the test and inspection data.
- e. A copy of the latest Laboratory Inspection Report by an independent agency with laboratory certification that deficiencies (if any) have been corrected.

#### 1.12.3 Inspection of Testing Laboratories

Prior to approval of non-accredited laboratories, the proposed testing laboratory facilities and records may be subject to inspection by the Contracting Officer. Records subject to inspection include equipment inventory, equipment calibration dates and procedures, library of test procedures, audit and inspection reports by agencies conducting laboratory evaluations and certifications, testing and management personnel qualifications, test report forms, and the internal QC procedures.

#### 1.12.4 Capability Check

The Contracting Officer retains the right to check laboratory equipment in the proposed laboratory and the laboratory technician's testing procedures, techniques, and other items pertinent to testing, for compliance with the standards set forth in this Contract.

#### 1.12.5 Test Results

Cite applicable Contract requirements, tests or analytical procedures used.

Provide actual results and include a statement that the item tested or analyzed conforms or fails to conform to specified requirements. If the item fails to conform, notify Contracting Officer immediately.

Conspicuously stamp the cover sheet for each report in large red letters "CONFORMS" or "DOES NOT CONFORM" to the specification requirements, whichever is applicable.

Test results shall be signed by a testing laboratory representative

authorized to sign certified test reports. Furnish the signed reports, certifications, and other documentation to the Contracting Officer via the QC Manager. Furnish a summary report of field tests at the end of each month. Attach a copy of the summary report to the last daily Contractor Quality Control Report of each month.

#### 1.12.6 Test Reports and Monthly Summary Report of Tests

The QC Manager shall furnish the signed reports, certifications, and a summary report of field tests at the end of each month to the Contracting Officer. Attach a copy of the summary report to the last daily Contractor Quality Control Report of each month.

#### 1.13 QC CERTIFICATIONS

##### 1.13.1 Contractor Quality Control Report Certification

Each Contractor Quality Control Report shall contain the following statement: "On behalf of the Contractor, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge, except as noted in this report."

##### 1.13.2 Invoice Certification

Furnish a certificate to the Contracting Officer with each payment request, signed by the QC Manager, attesting that as-built drawings are current and attesting that the work for which payment is requested, including stored material, is in compliance with contract requirements.

##### 1.13.3 Completion Certification

Upon completion of work under this Contract, the QC Manager shall furnish a certificate to the Contracting Officer attesting that "the work has been completed, inspected, tested and is in compliance with the Contract."

#### 1.14 COMPLETION INSPECTIONS

##### 1.14.1 Punch-Out Inspection

Near the completion of all work or any increment thereof established by a completion time stated in the Contract Clause entitled "Commencement, Prosecution, and Completion of Work," or stated elsewhere in the specifications, the QC Manager shall conduct an inspection of the work and develop a "punch list" of items which do not conform to the approved drawings and specifications.

Include in the punch list any remaining items on the "Rework Items List" which were not corrected prior to the Punch-Out Inspection. The punch list shall include the estimated date by which the deficiencies will be corrected. A copy of the punch list shall be provided to the Contracting Officer.

The QC Manager or staff shall make follow-on inspections 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."

#### 1.14.2 Pre-Final Inspection

The Government will perform this inspection to verify that the facility is complete and ready to be occupied. A Government "Pre-Final Punch List" may be developed as a result of this inspection. The QC Manager shall ensure that all items on this list are corrected prior to notifying the Government that a "Final" inspection with the customer can be scheduled. Any items noted on the "Pre-Final" inspection shall be corrected in timely manner and shall be accomplished before the contract completion date for the work or any particular increment thereof if the project is divided into increments by separate completion dates.

#### 1.14.3 Final Acceptance Inspection

The QC Manager, the QC specialists, the superintendent or other primary contractor management personnel, and the Contracting Officer's representative will be in attendance at this inspection. Additional Government personnel may be in attendance.

The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the "Pre-Final" inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final inspection stating that all specific items previously identified to the Contractor as being unacceptable, along with all the remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection.

Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the Contract Clause entitled "Inspection of Construction." When the Contracting Officer takes possession of partially completed work, it will be in accordance with Contract Clause "Use and Possession Prior to Completion".

#### 1.15 DOCUMENTATION

Maintain current and complete records of on-site and off-site QC program operations and activities.

##### 1.15.1 Contractor Production Report

Reports are required for each day that work is performed and shall be attached to the Contractor Quality Control Report prepared for the same day. Account for each calendar day throughout the life of the Contract. The reporting of work shall be identified by terminology consistent with the construction schedule. Contractor Production Reports are to be prepared, signed and dated by the project superintendent and shall contain the following information:

- a. Date of report, report number, name of contractor, Contract number, title and location of Contract and superintendent present.
- b. Weather conditions in the morning and in the afternoon including maximum and minimum temperatures.
- c. Identify work performed by corresponding Schedule Activity No., PC#, Modification No., etc.
- d. A list of Contractor and subcontractor personnel on the work site, their trades, employer, work location, description of work performed, hours worked by trade, daily total work hours on work site this date (Include hours on continuation sheets), and total work hours from start of construction.
- e. A list of job safety actions taken and safety inspections conducted. Indicate that safety requirements have been met including the results on the following:
  - (1) Was a job safety meeting held this date? (If YES, attach a copy of the meeting minutes.)
  - (2) Were there any lost time accidents this date? (If YES, attach a copy of the completed OSHA report.)
  - (3) Was crane/manlift/trenching/scaffold/hv electrical/high work/hazmat work done? (If YES, attach a statement or checklist showing inspection performed.)
  - (4) Was hazardous material/waste released into the environment? (If YES, attach a description of incident and proposed action.)
- f. Identify Schedule Activity No. related to safety action and list safety actions taken today and safety inspections conducted.
- g. Identify Schedule Activity No., Submittal # and list equipment/material received each day that is incorporated into the job.
- h. Identify Schedule Activity No., Owner and list construction and plant equipment on the work site including the number of hours used.
- i. Include a "remarks" section in this report which will contain pertinent information including directions received, problems encountered during construction, work progress and delays, conflicts or errors in the drawings or specifications, field changes, safety hazards encountered, instructions given and corrective actions taken, delays encountered and a record of visitors to the work site. For each remark given, identify the Schedule Activity No. that is associated with the remark.

1.15.2 Contractor Production Report (Continuation Sheet)

Additional space required to contain daily information on the Contractor Production Report will be placed on its Continuation Sheet(s). An unlimited number of Continuation Sheets may be added as necessary and attached to the Production Report.

#### 1.15.3 Contractor Quality Control Report

Reports are required for each day that work is performed and for every seven consecutive calendar days of no-work and on the last day of a no-work period. Account for each calendar day throughout the life of the Contract.

The reporting of work shall be identified by terminology consistent with the construction schedule. Contractor Quality Control Reports are to be prepared, signed and dated by the QC Manager and shall contain the following information:

- a. Date of report, report number, Contract Number, and Contract Title.
- b. Indicate if Preparatory Phase work was performed today (Yes/No checkboxes).
- c. If Preparatory Phase work was performed today (including on-site and off-site work), identify its Schedule Activity No. and Definable Feature of Work. The Index # is a cross reference to the Preparatory Phase Checklist. An example of the Index # is: 0025-P01, where "0025" is the Contractor Quality Control Report Number, "P" indicates Preparatory Phase, and "01" is the Preparatory Phase Checklist number(s) for this date. Each entry in this section must be accompanied with a corresponding Preparatory Phase Checklist.
- d. Indicate if Initial Phase work was performed today (Yes/No checkboxes).
- e. If Initial Phase work was performed today (including on-site and off-site work), identify its Schedule Activity No. and Definable Feature of Work. The Index # is a cross reference to the Initial Phase Checklist. An example of the Index # is: 0025-I01, where "0025" is the Contractor Quality Control Report Number, "I" indicates Initial Phase, and "01" is the Initial Phase Checklist number(s) for this date. Each entry in this section must be accompanied with a corresponding Initial Phase Checklist.
- f. Results of the Follow-up Phase inspections held today (including on-site and off-site work), including Schedule Activity No., the location of the definable feature of work, Specification Sections, etc. Indicate in the report for this definable feature of work that the work complies with the Contract as approved in the Initial Phase, work complies with safety requirements, and that required testing has been performed and include a list of who performed the tests.
- g. List the rework items identified, but not corrected by close of business; along with its associated Schedule Activity Number.

- h. List the rework items corrected from the rework items list along with the corrective action taken and its associated Schedule Activity Number.
- i. Include a "remarks" section in this report which will contain pertinent information including directions received, quality control problem areas, deviations from the QC plan, construction deficiencies encountered, QC meetings held, acknowledgement that as-built drawings have been updated, corrective direction given by the QC Organization and corrective action taken by the Contractor. For each remark given, identify the Schedule Activity No. that is associated with the remark.
- j. Contractor Quality Control Report certification, signature and date.

#### 1.15.4 Contractor Quality Control Report (Continuation Sheet)

Additional space required to contain daily information on the Contractor Quality Control Report will be placed on its Continuation Sheet(s). An unlimited number of Continuation Sheets may be added as necessary and attached to the Contractor Quality Control Report.

#### 1.15.5 Preparatory Phase Checklist

Each Definable Feature of Work that is in the Preparatory Phase shall have this checklist filled out for it. The checklist shall be identified by terminology consistent with the construction schedule. Attach this checklist to the Contractor Quality Control Report of the same date.

- a. Specification Section, date of report, and Contract number shall be filled out. Duplicate this information in the header of the second page of the report.
- b. Definable Feature of Work, Schedule Activity No. and Index # entry and format will match entry in the Preparatory Phase section of the Contractor Quality Control Report. Duplicate this information in the header of the second page of the report.
- c. Personnel Present: Indicate the number of hours of advance notice that was given to the Government Representative and indicate (Yes/No checkboxes) whether or not the Government Rep was notified. Indicate the Names of Preparatory Phase Meeting attendees, their position and company/government they are with.
- d. Submittals: Indicate if submittals have been approved (Yes/No checkboxes), if no indicate what has not been submitted. Are materials on hand (Yes/No checkboxes) and if not, what items are missing. Check delivered material/equipment against approved submittals and comment as required.
- e. Material Storage: Indicate if materials/equipment is stored properly (Yes/No checkboxes) and if not, what action is/was taken.

- f. Specifications: Review and comment on Specification Paragraphs that describe the material/equipment, procedure for accomplishing the work and clarify any differences.
- g. Preliminary Work & Permits: Ensure preliminary work is in accordance with the contract documents and necessary permits are on file, if not, describe the action taken.
- h. Testing: Identify who performs tests, the frequency, and where tests are to occur. Review the testing plan, report abnormalities, and if the test facilities have been approved.
- i. Safety: Indicate if the activity hazard analysis has been approved (Yes/No checkboxes) and comment on the review of the applicable portions of the COE EM 385-1-1 and LAW 55/90.
- j. Meeting Comments: Note comments and remarks during the Preparatory Phase Meeting that was not addressed in previous sections of this checklist.
- k. Other Items or Remarks: Note any other remarks or items that were a result of the Preparatory Phase.
- l. QC Manager will sign and date the checklist.

#### 1.15.6 Initial Phase Checklist

Each Definable Feature of Work that is in the Initial Phase shall have this checklist filled out for it. The checklist shall be identified by terminology consistent with the construction schedule. Attach this checklist to the Contractor Quality Control Report of the same date.

- a. Specification Section, date of report, and Contract number shall be entered.
- b. Definable Feature of Work, Schedule Activity No. and Index # entry and format will match entry in the Initial Phase section of the Contractor Quality Control Report.
- c. Personnel Present: Indicate the number of hours of advance notice that was given to the Government Representative and indicate (Yes/No checkboxes) whether or not the Government Rep was notified. Indicate the Names of Initial Phase Meeting attendees, their position and company/government they are with.
- d. Procedure Compliance: Comment on compliance with procedures identified at Preparatory Phase of Control and assurance that work is in accordance with plans, specifications and submittals.
- e. Preliminary Work: Ensure preliminary work being placed is in compliance and if not, what action is/was taken.
- f. Workmanship: Identify where initial work is located; if a sample

panel is required (Yes/No checkboxes); is the initial work the sample (Yes/No checkboxes); and if Yes, describe the panel location and precautions taken to preserve the sample.

- g. Resolution: Comment on any differences and the resolutions reached.
- h. Check Safety: Comment on the safety review of the job conditions.
- i. Other: Note any other remarks or items that were a result of the Initial Phase.
- j. QC Manager will sign and date the checklist.

[1.15.7 Quality Control Validation

Establish and maintain the following in a series of 3 ring binders. Binders shall be divided and tabbed as shown below. These binders shall be readily available to the Government's Quality Assurance Team during all business hours.

- a. All completed Preparatory and Initial Phase Checklists, arranged by specification section.
- b. All milestone inspections , arranged by Activity/Event Number.
- c. A current up-to-date copy of the Testing and Plan Log with supporting field test reports, arranged by specification section.
- d. Copies of all contract modifications, arranged in numerical order. Also include documentation that modified work was accomplished.
- e. A current up-to-date copy of the Rework Items List.
- f. Maintain up-to-date copies of all punch lists issued by the QC Staff on the Contractor and Sub-Contractors and all punch lists issued by the Government.

]1.15.8 Reports from the QC Specialist(s)

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**NOTE: Delete this paragraph if there are no requirements for QC specialist(s).**  
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Reports are required for each day that work is performed in their area of responsibility. QC specialist reports shall include the same documentation requirements as the Contractor Quality Control Report for their area of responsibility. QC specialist reports are to be prepared, signed and dated by the QC specialists and shall be attached to the Contractor Quality Control Report prepared for the same day.

]1.15.9 Testing Plan and Log

As tests are performed, the QC Manager shall record on the "Testing Plan and Log" the date the test was conducted, the date the test results were forwarded to the Contracting Officer, remarks and acknowledgement that an accredited or Contracting Officer approved testing laboratory was used. Attach a copy of the updated "Testing Plan and Log" to the last daily Contractor Quality Control Report of each month.

#### 1.15.10 Rework Items List

The QC Manager shall maintain a list of work that does not comply with the Contract, identifying what items need to be reworked, the date the item was originally discovered, the date the item will be corrected by, and the date the item was corrected. There is no requirement to report a rework item that is corrected the same day it is discovered. Attach a copy of the "Rework Items List" to the last daily Contractor Quality Control Report of each month. The Contractor shall be responsible for including on this list items needing rework including those identified by the Contracting Officer.

#### 1.15.11 As-Built Drawings

The QC Manager is required to ensure the as-built drawings, required by Section 01770N "Closeout Procedures," are kept current on a daily basis and marked to show deviations which have been made from the Contract drawings. Ensure each deviation has been identified with the appropriate modifying documentation (e.g. PC No., Modification No., Request for Information No., etc.). The QC Manager [or QC specialist assigned to an area of responsibility] shall initial each deviation and each revision. Upon completion of work, the QC Manager shall furnish a certificate attesting to the accuracy of the as-built drawings prior to submission to the Contracting Officer.

#### 1.15.12 Report Forms

The following forms will be available from the Contracting Officer after award:

- a. Contractor Quality Control Report w/ continuation sheet(s).
- b. Contractor Production Report w/ continuation sheet(s).
- c. Preparatory Phase Checklist.
- d. Initial Phase Checklist.
- e. Testing Plan and Log.
- f. Rework Items List.

#### 1.16 NOTIFICATION ON NON-COMPLIANCE

The Contracting Officer will notify the Contractor of any detected non-compliance 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 for excess costs or damages by the Contractor.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --