DEPARTMENT OF THE ARMY PODR 1110-1-7
Pacific Ocean Division, Corps of Engineers
CEPOD-ET Fort Shafter, Hawaii 96858-5440

Regulation
No. 1110-1-7 29 May 1998

Directorate of Engineering and Technical Services
QUALITY MANAGEMENT PLAN

1. PURPOSE: This regulation provides the general policy and procedures for the execution of quality assurance activities in the Directorate of Engineering and Technical Services (DETS), Pacific Ocean Division (CEPOD), and of quality control activities in the districts within the Pacific Ocean Division.

2. APPLICABILITY: This plan applies to all technical activities, services and products of DETS and its district functions. Execution of this plan shall also require close coordination with Programs and Project Management Division at the district level.

3. REFERENCES:

a. ER 5-1-11, dated 27 February 1998, Program and Project Management.

b. EC 1165-2-203, dated 15 October 1996, Water Resources Policies and Authorities - Technical and Policy Compliance Review.

c. CEMP-RT memorandum dated 24 July 1996, subject: Technical Roles and Responsibilities for USACE Hazardous Toxic and Radioactive Waste (HTRW) Programs.

d. ER 1110-2-263, dated 1 April 1996, Engineering and Design - Chemical Data Quality Management for Hazardous, Toxic, Radioactive Waste Remedial Activities.

e. ER 415-1-13, dated February 1996, Design and Construction Evaluation.

f. ER 1180-1-6, dated 30 September 1995, Contracts - Construction Quality Management.

g. ER 415-1-11, dated 1 September 1994, Construction - Biddability, Constructibility, Operability, and Environmental Review.

h. ER 1110-2-1150, dated 31 March 1994, Engineering and Design - Engineering and Design for Civil Works Projects.

i. ER 1110-1-12, dated 1 June 1993, Engineering and Design - Quality Management.

j. ER 415-3-11, dated 20 February 1991, Post Completion Inspection and Design Criteria Feedback Inspection.

4. DEFINITIONS:

a. Customer: The owner, client, local sponsor, user or beneficiary of a service or product.

b. Contractor: Other than in-house forces, such as other Corps offices, other government agencies or private contractors from which services are obtained for the product.

c. Functional Chiefs: For the purposes of this plan, these are the Chiefs of Engineering-Planning and Construction-Operations within DETS at CEPOD and their counterparts at the Districts.

d. Policy Compliance Review: A HQUSACE level review of civil works decision documents that involves analysis of decision factors and assumptions used to determine the extent and nature of Federal interest, project cost sharing and cooperation requirements and related issues.

e. Independent Technical Review (ITR): A review by a qualified person or team, not affiliated with the development of a project/product, for the purpose of confirming the proper application of clearly established criteria, regulations, laws, codes, principles and professional procedures. This review is not intended to be a detailed check of the designer's work.

f. Quality Assurance (QA): Quality assurance is the oversight of the quality control process to ensure its effectiveness in the production of quality products. This process encompasses issues of cost effectiveness, timeliness of product delivery, customer satisfaction and technical product quality.

g. Quality Control (QC): The process employed to ensure the performance of a task that meets the agreed upon requirements of the customer and appropriate laws, regulations, policies and technical criteria on schedule and within budget.

h. Quality Control Plan (QCP): A plan for each product/project which establishes and describes the procedures that will be employed to ensure compliance with all technical and policy requirements.

i. Quality Management Plan (QMP): A plan stating the quality management practices and business procedures to ensure the quality of a technical product, covering all aspects of product development, including planning, engineering, construction and operations. The QMP encompasses both QA and QC.

5. Division Policy on Quality Assurance and Quality Control:

It is the policy of CEPOD and its districts to develop and implement a Quality Management Plan that ensures technical products meet the agreed upon requirements of the customer and appropriate laws, policies and technical criteria, and are provided on schedule and within budget. Adherence to quality principles and established quality assurance and quality control practices is integral with the roles and responsibilities of all District and CEPOD functions.

6. CEPOD QUALITY ASSURANCE ROLES:

a. Responsibilities: The Pacific Ocean Division shall be responsible for reviewing and approving district quality management plans and for conducting of quality assurance activities to ensure district compliance with these plans such that:

(1) Mechanisms and procedures are in-place to enable the districts and their contractors to produce quality products that comply with established criteria, methods and procedures, and to apply competent technical resources to decisions and reviews.

(2) Districts and their contractors plan, design and construct safe, functional, cost effective and environmentally sustainable products that accomplish authorized purposes and meet customers' expectations.

(3) The Districts and their contractors develop quality control plans that (a) provide a level of detail appropriate to the type, complexity and acceptable level of risk of the product; (b) are consistent with guidance provided; and (c) provide for documentation of quality control actions, including reviews, comments and resolution of comments.

b. Quality Assurance Activities: The chief of each functional element within DETS shall have overall responsibility for quality assurance activities of products within their respective functional elements, and shall be supported in their QA activities by the chiefs and staffs of the other functional elements.

(1) Review and Approval of District QMPs and QCPs: CEPOD shall be responsible for the review and approval of all District quality management plans. CEPOD shall approve on a case-by-case basis, generic quality control plans, QCPs for projects or products exceeding $10 million, and selected projects for which Districts will be given advance notification.

(2) Counterpart Consultations: Informal counterpart consultations between district and CEPOD personnel shall be an essential quality assurance activity. These consultations shall be informational "two-way streets", providing CEPOD personnel an opportunity to assess whether district activities for product development are in compliance with the established quality control plan and providing district personnel with an informal avenue to CEPOD personnel on resolution of unique technical problems and/or issues on product development.

(3) In-Progress Reviews and Conferences: In-Progress Reviews and Conferences shall serve as formal quality assurance checkpoints to ensure that quality control has taken place and that appropriate progress is being made, particularly in prolonged major product development efforts. CEPOD participation in these conferences shall be a significant element of CEPOD's quality assurance program. Conferences may include items generated from Policy Compliance Reviews.

(4) Audit of the QC Process: CEPOD shall selectively audit or review the QC processes which may include spot checking specific technical products to assure the quality of the review and the resulting quality of the technical products. These reviews shall be for the purpose of identifying systemic problems, trends and possible improvements to the quality management and quality control process, and ensure compliance with CEPOD and HQUSACE policy. Corrective actions for problems that are identified during audits will be monitored.

(5) Monitoring/Fostering Technical Competency: Quality assurance includes an evaluation of the district's development and maintenance of the technical competency for production and review of a product. If appropriate technical expertise in a specialty area is not available within the district, the district must seek such expertise from outside sources, such as other districts, divisions, COE research laboratories, customer's organizations or private consultants.

(6) Regional Technology Transfer: Lessons learned, good ideas, and new technology will be shared with and among districts as part of continuing efforts to promote total quality management. Technology transfer will include information from external sources as well as information internal to the Corps.

(7) Regional Guidance: Regional guidance will be provided to districts to ensure compliance with existing policy or to provide interim regional guidance pending the development of national policy.

(8) Performance Indicators: CEPOD will proactively track Command Management Review (CMR) performance indicators to

identify problem areas and assist the District in resolution. Regional performance indicators will be developed as needed for areas requiring command attention and that are not included in the CMR.

(9) Programming Activities: Certification of DD Form 1391s for the MCA Program and coordination of technical programs such as the Architect-Engineer Responsibility Management Program (AERMP), Value Engineering, Dam Safety Program, design award programs, various individual and organizational recognition/awards programs, etal. will be accomplished at CEPOD.

(10) Design and Construction Evaluation (DCE): CEPOD will annually conduct a DCE at each district. Successes and deficiencies will be noted and evaluation feedback will be given to the districts. CEPOD will also accompany the HQUSACE DCE team during their visit to the districts.

(11) Command Assistance Visits: The command assistance program shall ensure that district personnel are aware of and comply with all requirements in this quality management plan and in each district's quality management plan. Compliance by the districts and their contractors with this plan shall be discussed during these visits as well as any corrective actions required to ensure compliance. These visits shall also serve to surface required modifications to the district's quality management plans, product specific and generic quality control and quality assurance plans and to this CEPOD quality management plan.

7. DISTRICT QUALITY CONTROL ROLES:

a. Responsibilities: Districts shall be responsible for developing and following quality management practices and business procedures to ensure quality products. This includes all interim products that are required for the development of an end product, from the inception of planning through construction. These objectives shall be met by development and execution of Quality Management and Quality Control Plans.

b. Execution: Quality control responsibilities shall be executed consistent with the guidance set forth herein and with each district's Quality Management Plan.

c. Quality Management Plan (QMP): Each district shall establish a quality management plan (QMP) that complies with the policy and principles presented in this plan and in applicable USACE regulations. These QMPs shall be reviewed and approved by CEPOD-ET. Quality management for construction activities shall be in conformance with reference 3.f. Quality management for HTRW activities shall be in conformance with references 3. d. and c.,

and the appropriate regulatory authority, be it EPA Region IX or X, or the host country's environmental authority.

d. Quality Control Plan (QCP): A quality control plan (QCP) shall be prepared prior to initiation of technical work or during the design, if applicable, for every product or service, whether obtained using in-house or contractor forces. It shall be updated as required.

(1) Engineering-Planning QCP: The QCP shall include a brief description of the project, authority, location, program amount, customer/sponsor, etc.; a technical criteria statement indicating what design standards will govern; the name and discipline of the project/study manager; the names and disciplines of the design/study team and the independent technical review team; and schedules for review submittals and design/study completion. It should also address the requirements for Biddability, Constructibility, Operability and Environmental (BCOE) review; plan-in-hand review; other agency reviews; customer involvement; centers of expertise involvement; value engineering; site condition visits; federal, state and local permits and licenses required for construction; asbestos, lead and other HTRW contamination; Engineering Considerations and Instructions (ECI) for construction; lessons learned feedback; etal. The QCP shall include requirements for documents to be checked for interdisciplinary coordination and intradisciplinary check by a senior person or supervisor prior to submission for ITR. A generic QCP may be developed and used for routine, minor products. The QCP shall be submitted to Programs and Project Management Division for incorporation into the project management plan (PMP), as applicable for specific projects.

(2) Construction QCP: Basically the implementation of reference 3.f., i.e., Contractor Quality Control (CQC) and Government Quality Assurance (QA), should serve as the QCP.

e. Quality Control Activities:

(1) Responsibilities: The chief of each functional element within the district shall have overall responsibility for the technical quality of products that are managed within the functional element. Other functional chiefs, the product development team, the project manager, and the review team also have significant roles and responsibilities in achieving quality products. These roles and responsibilities shall be described in the district's quality management plan.

(2) Independent Technical Review (ITR): A key to successful execution of the quality control process for the products developed by the planning and engineering functional

elements and their contractors is the independent technical review of a product. This review shall be accomplished by an independent technical review team composed of individuals having expertise in disciplines involved in the type of product being developed and reviewed, and who were not involved in product development. The ITR is intended to ensure that an acceptable design has been produced and it does not negate the necessity for the designers' organization to perform a detailed check.

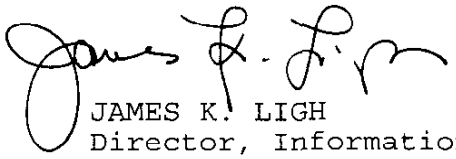
(a) For large and/or complex projects, Districts are encouraged to utilize review teams or individual team member external to their district to promote independence of review and to acquire the necessary technical expertise.

(b) ITR of in-house and contract HTRW products will be performed by the Center of Expertise when required by reference 3.d.

(3) Product Developed by Contractors: For products developed either wholly or partially by a contractor, development and execution of a QCP for the contractor product shall be the responsibility of the contractor. The District's quality control plan shall outline the overall quality control activities.

(4) Final Documentation and QC Certification: Proper documentation is another key component of an effective quality control process. Significant comments, issues and decisions must be recorded and the entire process must leave a clear audit trail. The documentation of the independent technical review and other quality control processes prescribed in a product's QCP shall be included in the official project files.

FOR THE COMMANDER:



JAMES K. LIGH
Director, Information Management

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