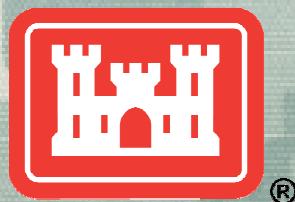


Tulane Engineering Forum

QA Role in Levee Construction

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US Army Corps of Engineers
BUILDING STRONG®



Construction Compliance, Design Verification and Deviations

▪ Construction Compliance and Design Verification

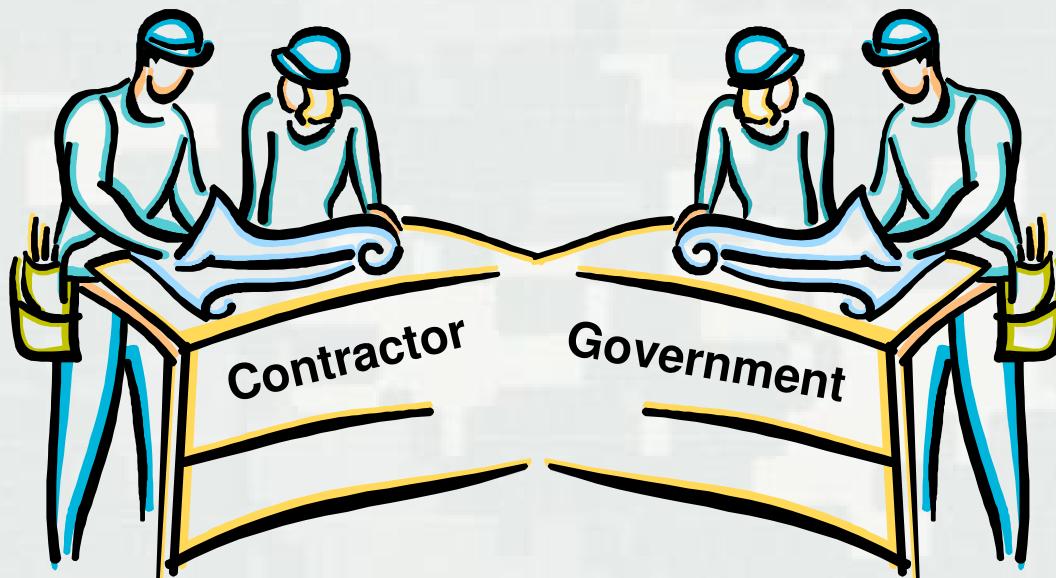
- ▶ Construction Quality Management
- ▶ Professional Engineer Contract Managers
- ▶ On-site Quality Assurance Representatives
- ▶ Submittal Review and Approval Process
- ▶ Engineering Considerations and Instructions
- ▶ Engineering During Construction
- ▶ Testing Documentation



Construction Compliance, Design Verification and Deviations

▪ Construction Quality Management

- ▶ The contractor is responsible for performing Quality Control (QC)
- ▶ The Government is responsible for performing Quality Assurance (QA)



Construction Compliance, Design Verification and Deviations

▪ Construction Quality Management

► Quality Control

- The Construction Contract defines the quality standards and the QC testing requirements
- By reference, the MVN/HPO CONSTRUCTION CONTROL MANUAL provides consistency of QC testing requirements for Soils, Concrete and Welding among contracts
- The contractor must prepare a detailed quality control plan for each definable feature of work detailing how the quality standards will be achieved. The plan must be approved before work can begin.
- The contract requires that the QC testing lab be validated by the Corps' Engineering Research and Development Center (ERDC)



Construction Compliance, Design Verification and Deviations

▪ Construction Quality Management

- ▶ Quality Control
 - Employs Three-Phase Inspection System
 - ▷ Preparatory
 - ▷ Initial
 - ▷ Follow-up
 - Document QC activities in the Resident Management System (RMS) Contractor Module



Construction Compliance, Design Verification and Deviations

▪ Construction Quality Management

► Quality Assurance

- Performed to ensure the contractor's QC system is functioning properly
- QA testing at least 5% frequency of QC testing
- QA surveys spot check TBMs, baselines and grade shots
- Annual general QA Plans developed by Construction Division
- Specific QA Plan developed for each contract
- ER requires QA independent testing labs be validated by ERDC



Construction Compliance, Design Verification and Deviations

▪ Construction Quality Management

- ▶ Professional Engineer Contract Managers
 - Resident Engineers are generally Registered Professional Engineers and generally have Administrative Contracting Officer Authority
 - Area Engineers Oversee Resident Engineers and have the Same Credentials and Authority
 - Construction Project Engineers Deal Directly with Contractors and Oversee On-Site QA Personnel
 - District Support Staff of Construction Engineers



Construction Compliance, Design Verification and Deviations

▪ Construction Quality Management

- ▶ On-site Quality Assurance Representatives
 - Provide daily observations of construction-in-progress and QC/QA surveys
 - Document QA activities in the Resident Management System (RMS)
 - Document deficiencies and corrective actions



Construction Compliance, Design Verification and Deviations

▪ Construction Quality Management

- ▶ Engineering Considerations and Instructions
 - A Means of Conveying Important Design Information to QA Staff
 - ▷ Designer's intent
 - ▷ Rationale for imposed limitations
 - ▷ Environmental issues
 - ▷ Other concerns



Construction Compliance, Design Verification and Deviations

▪ Construction Quality Management

► Engineering During Construction

- Defines Role in Supporting to The Quality Assurance Effort
 - ▷ Submittal Reviews
 - ▷ Contractor Requests for Information
 - ▷ Modifications to Correct Designs Deficiencies
- Provides for Designer's Periodic Inspection of Construction-In-Progress
- Supports Meeting Designer's Intent



Construction Compliance, Design Verification and Deviations

▪ Construction Quality Management

► Testing Documentation

- Testing results are electronically reported immediately upon availability and stored in the QAQCS Database
- Facilitates quick and ready access by designers
- Tracking mechanism for failed tests to subsequent passing re-test or corrective action
- Written documentation of test results



Construction Compliance, Design Verification and Deviations

▪ Deviations

- ▶ Deviations may arise from
 - Designer/ field initiated Modifications
 - Value Engineering Change Proposals
 - Contractor requested change/ deviation
 - Requests for information/clarification
- ▶ Credit May be Sought for Non-Compliant Work That is Otherwise Determined to Meet the Designer's Intent



▪ Formal Modifications are Required



QUESTIONS?

