Tulane Engineering Forum

QA Role in Levee Construction

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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)
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- 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
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- 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
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- 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?