



US Army Corps of Engineers

New Orleans Engineer District



Southeast Louisiana Flood Protection Authority-East

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USACE Construction Management

Hurricane and Storm Damage Risk Reduction System (HSDRRS)

Presented by: **Bruce A. Terrell, P.E., PMP**

Chief, Construction Division

New Orleans Engineer District



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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



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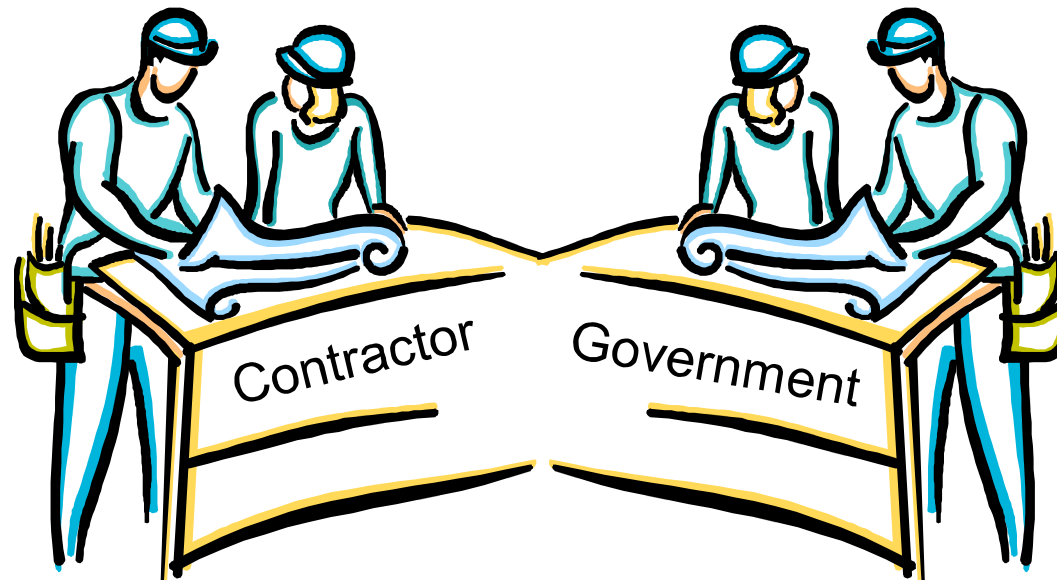
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Construction Compliance, Design Verification and Deviations

- **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 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





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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 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





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- **Construction Quality Management**

- Submittal Review and Approval Process

- Ensures contractor's proposed plans, materials and installed equipment comply with the contract requirements and will perform as intended





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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**





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QUESTIONS