

Reclamation Manual

Directives and Standards

Subject: Construction Activities

Purpose: Sets forth Reclamation requirements for construction management.

Authority: Reclamation Project Act of 1902 and Supplementary Acts, Reclamation Safety of Dams Act of 1978 and Amendments of 1984, Federal Acquisition Regulations, and Reclamation Manual (RM) Policy *Performing Design and Construction Activities* (FAC P03).

Contact: Director, Operations, W-6000

1. **Introduction.** Construction activities are performed within Reclamation to maintain and develop project infrastructure, respond to emergencies, and provide technical assistance in support of the agency's mission. Coordination of construction activities among all Reclamation Offices, including Regional and Area Offices, the Technical Service Center, and the Commissioner's Office is essential to ensure that construction activities are performed in a professional, safe, timely, and cost-effective manner, satisfying all technical requirements. Reclamation managers will ensure the utilization and development of Reclamation's capabilities through effective use of existing staff resources, collaborative development of work plans, use and monitoring of corporate business practices, and providing services to non-Reclamation clients. Reclamation staff resources, supplemented as needed, will accomplish Reclamation's construction workload in a manner that fully utilizes existing technical capability and utilizes opportunities to develop sustainable staff capability for the future, minimizing dispersion and duplication of expertise.
2. **Scope.** These requirements apply to all Reclamation construction program activities; Reclamation force account work, as appropriate; acquisition of equipment and materials that are to become a fixed part of the facilities; and services for non-Reclamation clients.
3. **Responsibilities.**
 - A. **Director, Operations (DO).** The DO has primary responsibility and exercises authority for supervision and coordination of developing and implementing the construction program of Reclamation.
 - B. **Regional Director.** Regional Directors are responsible for program accomplishment of Reclamation construction activities within their Regions. Regional Directors will work with their Area Managers, Power Managers, Construction Engineers, Construction Managers, the Technical Service Center, and others to ensure program accomplishment.

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- C. **Area Manager/Power Manager.** Area Managers/Power Managers will perform work as delegated by Regional Directors. Area Managers/Power Managers will ensure that the necessary elements to support an effective and efficient construction process are implemented (e.g., coordination and communications with all involved offices and stakeholders).
- D. **Construction Engineer/Construction Manager (CE/CM).** The CE/CM (or other managers appointed by the regional director) are responsible for administering construction activities, understanding and ensuring implementation of the design intent, maintaining technical coordination between design and construction, and managing the construction staff to ensure compliance with the specifications. Typically the CE/CM is designated as the Contracting Officer's Representative (COR).
- E. **Project Management Team (PMT).**
- (1) The manager/director of the Reclamation office with program responsibility (originating office) will initiate the formation of the PMT on Safety of Dams or other critical, or complex or controversial projects. The PMT, will be responsible for executing of an efficient and cost-effective project process, coordinating the project through construction, and ensuring construction issues are communicated to the appropriate organizational structure and the design team. Generally the PMT will be comprised of managers one level above the primary personnel actively performing the work as well as a representatives of the originating office, area office, and the construction management office.
 - (2) In the specific case of Safety of Dams Projects, the PMT will be appointed by and report to the Area Manager, Chief, Dam Safety Office, and the Regional Director, see RM policy *Decisions Related to Dam Safety Issues* (<http://www.usbr.gov/recman/fac/fac-p02.htm>). Details for utilizing a PMT for Safety of Dams or other projects can be found in the *Safety of Dams - Project Management Guidelines* dated January 2000.
- F. **Director, Technical Service Center (DTSC).** The DTSC is responsible for providing engineering and technical standards and guidelines to promote consistent application of Reclamation and industry standards and value engineering practices. DTSC is the primary focus for Reclamation's construction activities outside regional boundaries including work with other Government entities and foreign activities. The DTSC provides technical services as requested by the Regional Director to support program accomplishments.
- G. **Chief, Dam Safety Office (DSO).** The DSO is responsible for Reclamation's Dam Safety Program development and administration of safety of dams activities. The DSO is

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responsible for Reclamation directives and guidelines governing the Dam Safety Program. The DSO supports the Department of Interior agencies in carrying out their Dam Safety Programs.

H. **Contracting Officer (CO).**

- (1) The CO provides the administrative service through which Reclamation solicits offers, enters into and administers contracts for construction, supply, materials, and services as provided in the Federal Acquisition Regulations (FAR). The CO's responsibilities include acquisition planning, determining acquisition method, obtaining applicable wage rates, preparing and issuing solicitations, evaluating offers, determining responsiveness of bids, bidder responsibility, making contract awards, issuing notice to proceed, and executing contract documents on behalf of the Government.
- (2) Following award, the CO is responsible for ensuring that the Government's contractual rights to performance are preserved, enforcing contractual requirements, issuing contract modifications, processing disbursements, resolving claims, and performing final contract closeout and settlement.

I. **Administrative Contracting Officer (ACO).** Following award of a contract, the CO may appoint an ACO in writing, as the responsible official for ensuring that the Government's contractual rights to performance are preserved. This includes enforcing requirements of the contract, performing contract administration, and ensuring that all contractual actions are documented. An ACO is a warranted contracting officer, subject to the limitations of the FAR and certificate of appointment. The ACO has the authority to execute contract modifications, obligate the payment of money by the Government, and render final decisions in accordance with the contract Disputes Clause.

J. **Contracting Officer's Representative (COR).** The CO and/or ACO may delegate authority to a COR for the technical oversight and administration of a contract. A COR is not authorized to obligate the Government for changes or additional services. Delegations will be in writing and clearly set forth the COR authority and limitations. Copies of delegations will be sent to the contractor as well as Reclamation design and construction offices.

K. **Contracting Officer's Technical Approval Officers (TAO).** The CO and/or ACO may designate various technical positions or specific individuals in Reclamation as TAO. TAO have limited responsibility for technical matters such as reviewing and approving drawings and technical data, providing counsel and advice on technical issues, and providing assistance on other technical matters that arise under a contract. TAO are not authorized to obligate the

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Government for any change in specifications or expenditure of funds. Delegations will be in writing and clearly set forth the TAO authority and limitations. Copies of delegations will be sent to the contractors involved as well as Reclamation design and construction offices.

- L. **Construction Representative/Inspector.** The Construction Representative/Inspector is normally the point of contact for the COR with the contractor's field personnel. The Construction Representative/Inspector represents the Reclamation design, contracting, and construction staffs in observing a contractor's means and methods of construction. Construction Representatives/Inspectors are not authorized to obligate the Government for any change in work activities or expenditure of funds. The Construction Representative/Inspector is responsible for being thoroughly familiar with the plans and specifications; recording observations and data; monitoring safety; performing labor checks; and advising their supervisor and other personnel, as appropriate, of problems and progress.
- 4. **Professional Registration for Construction Personnel.** Professional registration of certain construction management personnel is required as stipulated in RM policy *Performing Design and Construction Activities* (<http://www.usbr.gov/recman/fac/fac-p03.htm>). The requirements of registration is defined in the *Federal Personnel Manual* (FPM R338, appendix A).
- 5. **Training for Construction Personnel.**
 - A. Supervisors will ensure construction personnel are familiar with the latest edition of the Reclamation Safety and Health Standards (RSHS). Construction personnel will receive RSHS training (32 hours) and First Aid/CPR. Refresher training for RSHS and First Aid/CPR shall be provided as appropriate. Additional training in confined space entry, hazardous waste training (40 hour basic, 8 hour refresher, supervisor), lockout/tagout procedures, and COR maybe specifically required. For more discussions on safety and training requirements, see the RM policy *Occupational Safety and Health Program Policy* (<http://www.usbr.gov/recman/saf/saf-p01.htm>) and Guidelines, *Construction Management - Inspection*.
 - B. Specialized training of construction personnel is recommended in construction materials and methods utilized on Reclamation construction projects.
- 6. **Procedures for Preconstruction, Construction, and Postconstruction Activities.**
 - A. **Introduction.** The Area Manager, or designated responsible official, will ensure that adequate planning, coordination, communication, and oversight are performed during the preconstruction, construction, and postconstruction activities. The preconstruction activities consists of the development of the design, the specifications, and acquisition of the work.

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The construction activity is the actual performance of the construction work and begins with the award of the contract through substantial completion. Postconstruction consists of the activities required to allow the project to obtain O&M status. For all Safety of Dams Projects and other major features the PMT, originating office, design, and construction staff are assigned various responsibilities for each of the project/construction activities, referred to in the *Safety of Dams - Project Management Guidelines* dated January 2000.

- B. Preconstruction Activities.** The preconstruction activity focuses on the project development, assignment of responsibilities, preparation of designs, and specification development. The total project cost, authorizations, repayment, and initial project schedule will be developed during this activity. The PMT, or other responsible official of the originating office, will ensure the development of a project plan, assignment of available resources, and verify the availability of funding for the project. The CE/CM will ensure that the construction office provides necessary information, communication, and support, so that the preconstruction activities do not adversely impact subsequent project activities. Design data collection in particular, may require the involvement of the construction staff in close communication with the design staff. The information developed during preconstruction becomes paramount during the construction activity. The involvement of the construction staff during preconstruction is necessary to ensure a smooth transition of information into the specifications and thus the construction activity. There are several activities performed during the preconstruction where involvement by the CE/CM or their staff will be required, such as:
- (1) **Involvement with the PMT.** For Safety of Dams Projects and other major features which are critical or complex, the manager/director of the Reclamation office with program responsibility (Originating Office) will initiate the formation of a PMT to provide direction/oversight to all aspects of the construction project. For most projects, the PMT will be comprised of managers one level above the primary personnel performing the work. The CE/CM will be on the team and participate in the development of the project plan defining responsibilities, schedules, and deliverables of the construction staff. The PMT for Safety of Dams Projects, will be appointed by and report to the Area Manager, Chief, Dam Safety Office, and the Regional Director, see RM policy *Decisions Related to Dam Safety Issues* (<http://www.usbr.gov/recman/fac/fac-p02.htm>). A full description of these (and other) aspects of Safety of Dams project management is available in the Reclamation publication entitled *Safety of Dams - Project Management Guidelines* dated January 2000.
 - (2) **Support to the Design Team.** The office responsible for construction activities will provide support to the design team in various ways. This may include collection of design data, participation on value engineering studies, decisions on design approaches (e.g., detailed design or performance requirements), participation at consultant review

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board meetings, input into constructibility issues, and viability for certain construction materials or methods.

- (3) **Involvement in the Acquisition Planning.** The PMT or responsible official will ensure the development of an Individual Acquisition Plan (IAP) for the project. This development will begin as the data collection portion is being completed and the design is initiated. The design, construction, and acquisition offices are involved in the acquisition planning process. The CE/CM will provide input for the IAP regarding the constructibility and implementation of the design intent. The various methods for acquisition of the work will be discussed and explored. The decision on the acquisition method should occur prior to the draft specifications review so that all necessary language can be incorporated. For a discussion of the various strategies for acquisition planning, see the *Safety of Dams - Project Management Guidelines* dated January 2000, the FAR, and the contracting officer.
- (4) **Involvement in the Specifications Review.** Regardless of the size of the project, the office responsible for the construction activities will participate with the design team and provide a review of the specifications and drawings. The level of review will be dependent upon the complexity and scope of the project, and will include reviewing for constructibility, clarity for bidding, and completeness. The documents will include drawings, technical specifications, and all required contractual clauses such as Commencement and Prosecution, Scheduling, Permits and Responsibilities, and Liquidated Damages. The CE/CM will ensure the development of a Government-furnished logic diagram, as appropriate, for the specifications review and that the specifications require the contractor to develop an appropriate construction schedule.
- (5) **Development of a Construction Management Plan (CMP).** The PMT or responsible official will determine if a CMP is required. The CMP ensures that the construction management effort is consistent with the scope and complexity of the work. The plan will establish a schedule, budget, and procedures to ensure that the quality of the construction meets the specifications requirements and design intent. An example of a CMP is provided in the *Safety of Dams - Project Management Guidelines* dated January 2000. The development of the CMP early in the project activities will allow for defining and planning the construction staff involvement during the design data collection, value engineering, constructibility reviews, environmental assessment, public involvement, permitting, acquisition planning, site management during construction, construction communications, construction oversight, quality assurance activities, and postconstruction. The CE/CM is responsible for ensuring their staff is fully aware of the requirements of the CMP.

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- C. **Construction Activities.** Construction activities include all aspects of construction management including construction contract administration, construction inspection, materials engineering and testing, and construction surveying. The CE/CM will ensure that construction contractors comply with the plans and specifications, and implement quality control to prevent deficiencies in materials and construction practices. The CE/CM will ensure that sufficient personnel are available to perform the construction management activities; that personnel have the appropriate level of training, experience, and resources to perform their assigned duties; that the appropriate level of communications are maintained with the involved stakeholders and Reclamation staff; and that the procedures for adequate construction management are followed. The CE/CM will consult with the design team leader and, as appropriate, the principal geologist regarding critical construction activities, and events, (examples: foundation inspections, changed conditions, contractor proposals, etc.) to ensure the intent of the design is achieved and adequate quality control/quality assurance measures are implemented.
- (1) **Contract Administration.** Performance of construction contract administration will be in accordance with the FAR, Departmental, and Reclamation acquisition regulations. The CE/CM, CO, COR, and staff will be responsible for performing the contract administration. Six major areas of importance for construction contract administration are schedules, submittal requirements, labor compliance standards, contract modifications, contract disbursements, and resolution of disputes. (Guideline for *Administration of Contracts* is being developed.)
 - (2) **Quality Assurance.** The Government is required by the FAR to ensure quality assurance for all contract work. Quality assurance activities during a contract provide the Government with documentation that the construction is being accomplished as specified, but shall not relieve the contractor of the responsibility for providing adequate quality control measures. Specific inspection plans and procedures to verify contract performance criteria will be developed and implemented by Reclamation on a site-by-site basis, including procedures to assure efficiency and reasonableness of cost incurred in cost type activities. The extent of contractor quality control and Reclamation quality assurance requirements will depend upon the complexity and criticality of the project. Complex items have quality characteristics, not wholly visible in the end product, for which contractual conformance must be established progressively through precise measurements, tests, inspections, and other controls. A critical item is one whose failure could injure personnel or jeopardize the success of the project or a vital agency mission. The contractor will be required to perform quality control of their work to ensure the work meets the requirements of the contract. Reclamation will perform or direct independent quality assurance inspection and material testing for complex or critical items. Additional guidance to ensure quality assurance is provided in the

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Guidelines, Construction Management - Inspection. The development of a construction record (inspection and materials reports, photographs, etc.) is required for the project record. These written and photographic records will be developed, reviewed, and filed with the project record.

- (3) **Safety.** Reclamation policy exist for the implementation and administration of an effective safety and health program to ensure safe and healthful working conditions and facilities. For more discussions on safety and training requirements, see the RM policy *Occupational Safety and Health Program Policy* (<http://www.usbr.gov/recman/saf/saf-p01.htm>).

D. **Postconstruction Activities.** Following the completion of construction activities, several important activities remain to complete the project. These include contract close-out, completion of “as-built” drawings, technical reports, design summary, designers’ operating criteria, O&M manuals, transfer of the project from construction to O&M, and final contract file disposition. As the project plan is being developed, sufficient funding should be identified to complete project closeout.

- (1) **Contract Closeout.** Closeout of a contract includes final resolution of any outstanding disputes, completion of all punch-list items, verification and documentation of all warranties of construction, and processing of the final voucher with release of claims. Final inspection of the project shall be performed prior to the expiration of the warranty period with any deficiencies brought to the contractor’s attention for resolution. The project file shall document the inspection and resolutions.
- (2) **“As-Built” Drawings.** The CE/CM will ensure that original drawings are marked-up, “as-built” drawings are developed, and final distribution of the “as-built” drawings occurs. The process for development and distribution of “as-built” drawings is discussed in the *Safety of Dams - Project Management Guidelines* dated January 2000.
- (3) **Technical Reports.** A Technical Report of Construction will be prepared for all projects for which a PMT has been formed and is recommended as a minimum technical report for other projects. For further information on the content of such reports, see *Safety of Dams - Project Management Guidelines* dated January 2000.
- (4) **Design Summary, Designers’ Operating Criteria, and O&M Manuals.** Preparation of these technical documents will be addressed in the project plan and if required will be prepared by the designated individuals. Preparation of these documents will begin early in the design process with input from the PMT, CE/CM,

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originating office, and operating office as required. The O&M manuals will be provided to the operating entity upon completion of construction by the CE/CM. For further details on the content of such reports, see *Safety of Dams - Project Management Guidelines* dated January 2000.

- (5) **Transfer of Project Works From Construction to O&M Status.** This step is the formal process that transfers project works from construction to O&M status, see RM directive *Transfer of Operation and Maintenance (O&M) Responsibility of Project Works* (<http://www.usbr.gov/recman/fac/fac01-05.htm>), for additional information.
 - (6) **Final Disposition of Contract Files.** The final file disposition will be accomplished in accordance with RM directive *Records and Information Management* (RCD 05-01) and in the *Information Management Handbook*.
- E. **Services for Non-Reclamation Clients.** The objective for all construction management activities performed by Reclamation is to uphold high construction standards, obtain a quality product, and complete the work in an efficient, economical, safe, and timely manner. To ensure that this objective is not compromised, work for other clients will meet the standards of this Directive, unless otherwise agreed to with the client. Any substitute standards agreed to will be clearly defined in the Agreement prior to any work being performed, and Reclamation will ensure that Reclamation personnel are properly instructed on the appropriate standards. For discussions of requirements for performing services for non-Reclamation clients, see RM directive *Maintenance of Design and Construction Technical Capabilities Within Reclamation*, (FAC 03-01, paragraph 5D).