Reclamation Manual

Directives and Standards

Subject: Design Activities

Purpose: Sets forth the requirements for coordination, process, and performance of design activities

Authority: Reclamation Project Act of 1902 and Supplementary Acts, Reclamation Safety of Dams Act of 1978 and Amendments, Reclamation Manual.

Contact: Director, Technical Service Center, D-8000

1. **Introduction.** Design 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 design activities among all Reclamation offices, including the Regional, Area, and Construction offices, the Technical Service Center, and the Commissioner's Office is essential to ensure that design activities are performed in a professional, timely and cost-effective manner, satisfying all technical and safety requirements, and are consistent with authorized service agreements between the office performing the design activities and the originating office. Reclamation staff resources, supplemented as needed, will accomplish Reclamation's design workload in a manner that utilizes existing technical capability, utilizes opportunities to develop sustainable staff capability for the future, and minimizes the dispersion of expertise. Reclamation managers will ensure the utilization and development of Reclamation's design capabilities through the effective use of existing staff resources, collaborative development of work plans that carry out the agency's mission, adherence to, and monitoring of corporate business practices, and providing services to non-Reclamation clients as appropriate.

2. **Scope.** These requirements apply to all Reclamation design activities that require the application of engineering principles and practices consistent with the Reclamation Manual Directives and Standards (D&S) HRM 05-01, Professional Registration for Engineers and Architects. This D&S is located at: www.usbr.gov/recman/hrm/hrm05-01.pdf.

   A. **Applications.** Design activities may be associated with a multitude of programs, projects, or other activities related to the Reclamation mission, including planning studies, Operation and Maintenance Programs, the Safety of Dams Program, emergency response work, final designs leading to construction, and other technical assistance supporting the agency's mission. Appraisal studies are conducted using existing data to make cost estimates and to determine if at least one potentially viable alternative exists, and whether or not to recommend that the project proceed to feasibility-level studies. Feasibility studies are detailed investigations specifically authorized by law to make cost estimates and to determine the desirability of seeking congressional authorization. Final designs are for authorized projects and include enough information to economically construct the project. For design activities, risk reduction objectives and security issues are included when required.

B. Coordination. Coordination of design activities will vary, depending on the size, cost, or other issues. For example, small projects performed under the simplified acquisition authority generally do not require as much coordination as larger more costly projects. Things to be considered are: 1. Controversial issues; 2. Complex or critical items; 3. New products or technology; 4. Life and safety issues; 5. Dam safety; and 6. Security issues. 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 in which failure could injure personnel or jeopardize the success of the project or a vital agency mission.

3. **Roles and Responsibilities.** This section defines the roles and responsibilities of various positions in Reclamation and the interaction among these positions to ensure successful design coordination and completion of design activities.

A. **Regional Director.** Regional Directors are responsible for accomplishment of Reclamation programs involving design activities within their regions. Regional Directors will coordinate with their Area Managers, Regional Division Managers, Power Managers, Construction Managers, the Technical Service Center, and others to accomplish design activities.

B. **Area Managers, Construction Managers, Power Managers, and Regional Division Managers.** Area Managers, Construction Managers, Power Managers, and Regional Division Managers will perform the work as delegated by the Regional Director and ensure that the requirements of this directive are implemented. To aid in accomplishment and coordination, programs are often divided into projects. The office delegated responsibility for a project is the originating office for coordination of design activities. If the design activity is not associated with a Reclamation program or project, such as work for other government agencies authorized under the Economy Act, the office delegated the responsibility from the appropriate Director for the design activities is the originating office for coordination of design activities.

C. **Director, Technical Service Center (DTSC).** The DTSC prescribes the engineering and technical standards and guidelines used to prepare designs to promote consistent application of Reclamation and current industry standards and value engineering practices. The DTSC provides design activity services as requested by the originating office.

D. **Project Management Team (PMT).** For large or critical projects, the Regional Director or the person with delegated authority will initiate the formation of the PMT to provide general direction and oversight to the design activities leading to construction. The PMT will be responsible for executing an efficient and cost-effective project process using various teams and individuals to accomplish project

activities often implementing service agreements with various offices. Generally the PMT will be comprised of managers representing Area, Construction, Power, Region, and Denver offices as appropriate. The project leader and the project team accomplish their work under the guidance and authority of the PMT.

(1) In the case of projects funded by the Dam Safety Program, the Area Manager, Chief, Dam Safety Office, and the Regional Director will appoint the PMT and the PMT will report to these managers (see Reclamation Manual Policy FAC P02, "Decisions Related to Dam Safety Issues"). A full description of these (and other) aspects of the Safety of Dams project management is available in the Reclamation publication entitled "Safety of Dams - Project Management Guidelines" at the following web site: http://sodis.usbr.gov/dam%5Fsafety/documents/SODPMG1.pdf.

E. **Project Leader.** The originating office will appoint a project leader with overall responsibility to coordinate the project. The project leader has responsibility for initiating work on a project, coordination, and monitoring work through project completion.

F. **Project Team.** The project team is directed by the project leader and may include the leaders of several multidisciplinary subteams that support development of the project. These subteams may include but are not limited to teams that deal with different aspects of the project such as design, environment, real estate, operation and maintenance, procurement, and construction. The design team is the subteam responsible for accomplishing design activities for a project.

G. **Design Team Leader.** The design team leader, with the support of the design team members, develops the design activity plan which will include identifying resource and data requirements, defining the scope of the work, evaluating alternatives, developing design team budgets, developing service agreements, scheduling the work, and tracking progress. The design team leader will present the completed design activity plan to the project leader or the PMT for approval, whichever is appropriate.
The design team leader is responsible for a variety of design activities for the project leader. The design team working under the guidance of a design team leader is responsible for ensuring that the work receives the proper coordination, technical, and peer reviews; agency program review (such as value program and security reviews); and meets the requirements set by the project leader.

H. **Design Team.** The design team functions as a subteam to the project team. For small or less complex projects the design team may be an individual. The primary functions of the design team are to share technical information, resolve technical issues, coordinate technical activities, develop appraisal or feasibility designs and cost estimates for planning studies, or for final designs, produce a drawing and

specification package for the project features with enough information to economically and safely construct the project. The design team operates under the direction of the design team leader and is staffed by personnel from the office(s) providing design services for the project feature. The design team will typically consist of a design team leader and representatives of key engineering and scientific groups involved in the development, design, and construction of project features. On teams where a principal geologist is utilized, this design team member will typically reside in the office performing the designs. The construction office that executes the construction contract should be invited to participate on the design team for final designs leading to construction.

4. **Design Coordination.** The requirements for coordination of design activities will vary. However, all projects require tracking from inception to completion, ensuring that all items on the design activities plan are met. The project leader in conjunction with the office(s) performing the design activities must identify a design team leader. The design team leader will ensure proper coordination with the essential people to coordinate design activities.

   A. For projects that require the formation of a PMT, the PMT will oversee the development of a design activity plan covering all critical elements of the project as described in Section 5.A. The PMT will meet at selected milestones and review actual progress to date. At least five meetings are suggested: one at the beginning of design data collection, one during the design process when the concept designs are developed, one during the specifications review conducted prior to solicitation for contract acquisition, one just prior to completion of construction, and one at the completion of postconstruction activities. Specific meetings may be determined by the project leader or the PMT. The design team leader will prepare a status report for each meeting that shows the progress of items on the design activity plan. For dam safety work, this report will also be provided to the team described in Section 3.D.

5. **General Requirements for All Design Activities.** Regardless of the size or complexity of a project, these general requirements are to be followed for all Reclamation design activities.

   A. **Design Activity Plans**. Before design activities begin, a design team who has the responsibility to prepare the required design activity plan must be selected. Small projects without complex or critical items can have a simplified design activity plan, shown in Appendix 1. The Suggested Design Activity Plan Checklist shown in Appendix 2 is another example with more details. This directive makes a distinction between a project plan and a design activity plan. A project plan is a plan for an entire project and includes a design activity plan. When a project includes only design activities, then a design activity plan can serve as the project plan. These appendices are examples that show items to be considered in a design activity plan. Large projects,

projects with complex features, or projects where a detailed plan is required must have a design activity plan prepared by the design team and approved by the PMT. For projects without a PMT the design activity plan is approved by the project leader.

(1) As a minimum, a design activity plan will include a schedule, scope of work, deliverables, budgets, and cost authorities for proper accounting. Requirements for peer review, value analyses, and cost estimating are to be included if required by project requirements and/or Reclamation policies.

B. **Service Agreements.** After the originating office agrees to the design activity plan and the design team leader is identified, service agreements will be prepared, as necessary, with the design service providers. These agreements will include the final scope of work, deliverables, budgets, schedules, and cost authorities for proper accounting. An approved simplified design activity plan shown in Appendix 1 may serve as a service agreement for small projects without complex or critical items.

C. **Design Criteria and Standards.** Design activities must be performed in accordance with established Reclamation design criteria, Reclamation engineering, architectural, or technical standards, and approved national design standards. The DTSC is responsible for establishing and maintaining, or identifying design criteria and engineering and technical standards for all Reclamation design work; see Reclamation Manual policy, "Performing Design and Construction Activities," FAC P03 at the following web site: http://www.usbr.gov/recman/fac/fac-p03.pdf .

D. **Professional Registration.** Professional registration is required for certain Reclamation staff who approve engineering decisions or are in responsible charge of architectural or engineering designs. Reclamation is committed to the highest professional standards of practice as stipulated in Reclamation Manual policy "Performing Designs and Construction Activities," FAC P03, available at the following website: http://www.usbr.gov/recman/fac/fac-p03.pdf. Specific requirements for professional registration are in the D&S HRM 05-01.

E. **Design Activities Performed by Others.** Where design activities for Reclamation are performed by an outside company/organization, the company/organization providing the design services is responsible for the technical adequacy of their design activities. Reclamation participation will involve the appropriate engineering/architectural disciplines in the development of the Statement of Work, product reviews, and acceptance within the terms of the administration of the contract. Reclamation professionals are not to provide technical approval of the designs but are to ensure, through review, that quality and technical adequacy requirements and Reclamation's use intent are met. To ensure these requirements are met, design drawings will be signed "Received" by a Reclamation professional registered in the appropriate engineering/architectural discipline.

F. **Signatory Responsibilities for Design Drawings**. In order to document the process by which designs are produced in Reclamation, each design drawing will be signed by those directly involved in its development. For purposes of this document, a drawing is defined as a graphical depiction (with notes as required) of a site, feature, object, or concept which is produced to convey engineering, scientific, or other technical information. Signatory documentation will be captured in the signature block and revision blocks of the drawings produced to illustrate the design. Reclamation uses a standard signature block for its drawings as noted in "Information Management Handbook Volume III, Drawing Management and Drafting Standards."

(1) Feasibility design drawings have design features which are developed for general evaluation purposes only. The designs depicted on these drawings are not of sufficient detail for use in construction or procurement. Feasibility design drawings have a minimum of two signatures: Designed and Reviewed. Given the impact these feasibility designs have on project cost estimates and ultimately on congressional appropriations, at least one of the individuals signing these drawings must be registered in the appropriate discipline. The responsibilities of those signing each signature line for feasibility designs are outlined below:

(a) **Designed.** By this signature, the individual assigned design responsibilities is certifying the preliminary design layout depicted on the drawing is consistent with currently accepted engineering practice and generally satisfies all of the appropriate and available design criteria and data for this level of design. This person is also responsible to ensure the drawing conveys a feasible, functional, and compatible concept for all of the critical design requirements.

(b) **Reviewed.** By signing this line a person is making an independent review and certifying that there is sufficient detail on the drawing.

(2) Final design drawings are drawings leading to construction or procurement. The responsibilities of those signing each signature line for final design drawings are outlined below:

(a) **Designed**. By this signature, the designer is certifying the design is consistent with currently accepted engineering practice and incorporates the site conditions as depicted in the design data. The designer is also responsible to ensure the drawing accurately conveys the design intent. The designer need not be registered.

(b) **Drawn**. By this signature, the person who developed the drawing is certifying the drawing and the electronic models upon which it is based comply with Reclamation's Drafting Standards.

(c) **Checked.** By this signature, the checker is certifying that he/she has completed a detailed review of the design for compliance with currently accepted engineering practice and for incorporation of the site conditions as depicted in the design data or is certifying he/she has confirmed that a detailed review of the design has been completed by others and has reviewed the drawing for compliance with the design intent. The detailed review(s) include(s) a check of calculations, tests, and methods used to develop the results shown in the document. The checker also ensures the calculations support the design. The checker also is responsible for reviewing the drawing to ensure it accurately conveys the design intent. The checker need not be registered.

(d) **Technical Approval**. The Technical Reviewer signs the TECH. APPR. line on the drawing. The individual who signs the technical approval line on the signature block accepts the responsibility for the technical information depicted on the drawing. The individual assuming this responsibility shall have been in responsible charge and intimately involved in the preparation of the design and the drawing. The individual must be familiar with the basic data, criteria, and procedures used to develop the results shown on the drawing. For drawings showing work from several disciplines, it is the signing individual's responsibility to ensure all of the technical information prepared by other professions and disciplines and depicted on the document is compatible with the overall design intent. However, technical approval of design drawings prepared by other professions and disciplines shall be provided by the profession or discipline preparing those design drawings. In cases where the designs depicted on the final design drawing meet the criteria for preparation by a registered engineer or architect, the person signing the TECH. APPR. line of a final design drawing signature block must be registered in the appropriate discipline (see D&S HRM 05-01), and is required to put their professional designation after their signature, such as P.E. for Professional Engineer or R.A. for Registered Architect.

(e) **Peer Reviewer/Administrative Approval**. The Approved signatory affirms that a peer review or an administrative approval process was performed. The Peer Reviewer signs the APPROVED line on the drawing. The notation "PEER REVIEWER" and the Peer Reviewer's title should be added below the signature line (e.g., PEER REVIEWER - DIVISION CHIEF). Alternatively, the APPROVED signature confirms that an

administrative approval process was performed. The notation "ADMIN. APPROVAL" and the Administrative Approver's title should be added below the signature line (e.g., ADMIN. APPROVAL – DEPUTY AREA MANAGER). The differences between these approvals are:

(i.) **Peer Reviewer**. A "Peer Reviewer" designation on the signature line will be used where this final review is technical. A peer review is a technical quality/assurance control process performed by a professional who is independent of the work performed. It emphasizes a review of the basis of the technical approach and other procedures used and establishes the validity and suitability of the design. The peer review does not normally include a check of calculations, tests, and methods, but does verify that review and checking have been completed by others and are adequately documented. The peer reviewer must possess technical qualifications, practical experience, and professional judgment to properly conduct a peer review and should be an experienced practitioner in the relevant discipline with recognized and verifiable credentials. Therefore, to sign as "Peer Reviewer" on a drawing that is Technically Approved by a Registered Professional Engineer or Architect, the Peer Reviewer must also be registered in the appropriate discipline, and is required to put their professional designation after their signature, such as P.E. for Professional Engineer or R.A. for Registered Architect.

(ii) **Administrative Approval**. An "Admin. Approval" designation will be used where this final review is focused on programmatic, operational, or similar administrative issues. This signature will typically be provided by a Facility Manager, Project Office Manager,

Originating Office Manager, or the project leader, but must be someone familiar with the project needs. Given the more general nature of such reviews, the person signing "Admin. Approval" need not be registered.

(3) Each Director under whom final design drawings are produced will develop a procedure to determine the type of review required for each aspect of a project's design. A minimum of three people must be involved in the development and approval of final design drawings:

(a) **Designer**. In addition to his/her design activities, this person may also develop the drawing and provide the technical approval for the design. This person cannot also check the design or provide the peer review or the administrative approval of the design.

(b) **Checker**. In addition to his/her checking activities, this person may also develop the drawing and provide the technical approval for the design. This person cannot also produce the original design or provide the peer review or administrative approval of the design.

(c) **Peer Reviewer/Administrative Approval**. This person must maintain their independence from the design development process and limit their involvement to their peer review/administrative review responsibilities.

G. **Technical Approval and Peer Review.** The design team, under the guidance of the design team leader, is responsible for ensuring that proper technical oversight and peer reviews are performed, and that the person providing the technical oversight review of designs is qualified to sign the drawings as technically approved, if required, according to the Professional Registration for Engineers and Architects D&S HRM 05-01. This may require that those reviews be performed by another Reclamation office, if the office performing the designs determines that it doesn't have the technical capability, if it is more efficient, or the Region's delegation of design responsibility requires another office provide the oversight. Peer review requirements shall be discussed and included in the development of the design activity plan for design and the service agreements.

H. **Signatory Responsibility for Technical Specifications.** In order to document the process by which technical specifications are produced and approved, each technical specifications package will contain a specifications signature sheet showing at least the following:

Project Title:

Region:

Technical Specifications:

Prepared by: _____ Date: _____

Technical Approval: _____ Date: _____

(1) The person signing the specifications package as "Prepared" shall have developed or assembled the technical specifications.

(2) The person signing the specifications package for "Technical Approval" shall have been in responsible charge of the overall design including developing or assembling the technical specifications. This person will typically be the Design Team Leader. By this signature, this person is certifying the specifications

paragraphs convey the design intent as portrayed on the drawings included therein. For specifications package containing designs from multiple disciplines, it is the signing individual's responsibility to ensure the technical information prepared by other professions and disciplines and depicted in the document is compatible with the overall design intent. In cases where the designs described by the specifications meet the criteria for preparation by a registered engineer or architect, this person shall be registered.

I. **Drawing and Specifications Review.** This is the final review of the drawings and specifications paragraphs prior to publishing as a solicitation, to ensure a complete and sufficient document for contracting the work. Review comments are provided to the design team leader by project members, design members, the contracting office, and other involved offices.

J. **Records Retention and Engineering Drawings Management.** Records must be retained in accordance with the Information Management Handbook, Volume III, Drawing Management and Drafting Standards and in accordance with Directive RCD 05-01.

6. **Design Activities From Inception to Award.** The design process must follow the design activity plan to ensure the successful accomplishment of design activities.

A. **Flag Dates.** Schedules will be developed for submitting important information like design data and deliverables. The design team leader will schedule progress reviews with the project leader or the PMT, whichever is appropriate.

(1) Design reviews generally should be scheduled at the concept stage of design (at about 30 percent complete), midway through design (at about 60 percent complete), and a final design review (at about 90 percent complete). At the final design review, design drawings and specifications are complete, allowing one last review before they are published. More information on this may be found in the Total Design Process Guidelines on the TSC Intranet page http://intra.usbr.gov/~tsc/tdp.pdf.

(2) **Site-Specific Design Criteria.** Site-specific requirements and assumptions need to be determined and documented by the originating office in coordination with the office collecting the design data and the design office. General design criteria will be determined by the design team.

B. **Design Data Collection.** Adequate design data must be collected and ample coordination must be accomplished to ensure successful execution of design activities. Projects which require collection of geologic design data demand significant up front coordination among the design team and geologists at the various offices involved. The

originating office and the office providing the design services must agree on the required content, degree of detail of the design data, and the schedule for receiving the design data. The data submittal will be reviewed by the design team and supplemental data requests will be made if necessary. Design data should be collected in accordance with the information presented at the web site: http://intra.usbr.gov/~tsc/documents/design.htm.

C. **Deliverables.** For appraisal and feasibility studies, the main design product will be a report containing cost estimates, preliminary designs (if required), and further recommendations.

(1) For final designs, the deliverables will generally contain final design drawings, construction schedule estimates, specifications, quantity estimates, independent government cost estimates, and any other information so that the feature can be constructed or contracted for construction. Other deliverables will be listed in the design activity plan or may be required for postconstruction activities as described in Section 7.

D. **Cost Estimates.** At various stages of the project, cost estimates are to be developed to aid in the decision making and value analysis process. The design activity plan will define the required level of estimate and purpose at the various stages of the design process.

E. **Value Analyses.** The design activity plan will identify if a value analysis study should be performed and at what stage of the design process (see Reclamation Manual sections CMP P05 and CMP 06-01 at: http://www.usbr.gov/recman/cmp/index.htm). Value analysis must be applied to an overall study to determine the best alternative, but value engineering may be applied to a specific design activity. Projects of more than $1,000,000 in construction costs require a value analysis study under OMB Circular A-131, and projects of more than $500,000 in construction costs generally require a value analysis study under Department of the Interior Policy 369 DM 1.

F. **Revisions.** Revisions to designs after drawings and technical specifications are originally signed will be reviewed by a design team representative (typically the design team leader). In cases where the designs meet the criteria for preparation by a registered engineer or architect, this review will be completed by a design team representative registered in the appropriate discipline and documented by including their professional designation after their initials (e.g., P.E. for Professional Engineer or R.A. for Registered Architect). The review of revised drawings shall be documented on a revisions block on the drawing as described in the "Information Management Handbook, Volume III, Drawing Management and Drafting Standards." The review of technical specifications changes will be documented on a signature sheet included with the specifications revisions.

G. **Design Documentation**. The steps used in the design process need to be documented and filed. This documentation will include a design data package and correspondence, design notes, design calculations, specifications, drawings, and written reports such as the design summary and Designer's Operating Criteria. Examples of a design summary and a Designer's Operating Criteria are shown at: http://intra.usbr.gov/infrastr/docsopdes/doc.htm.

H. **Critical Path Method.** The design activity plan for large or complex projects may require Critical Path Method (CPM) scheduling of tasks for the work to be accomplished. A detailed example of what should be included in a design activity plan can be found at: http://intra.do.usbr.gov/tsctl_pm/.

I. **Pre-award.** The design team needs to prepare and review specifications amendments, if required, for all projects in which they are involved. Small projects or projects without complex or critical features may be contracted by using simplified acquisition authority, two step sealed bid, or negotiated-type acquisition that requires a Technical Proposal Evaluation Committee (TPEC). As a minimum the design team leader is to be a consultant to the TPEC, and at least one member needs to be registered as required by D&S HRM 05-01.

7. **Design Activities From Award Through Construction.**

A. **Introduction.** Designers need to be available for many activities after contract award. Small projects without complex or critical features may not require as much participation as a large project or those with complex or critical features, but the design team needs enough involvement, including site visits, to ensure that the design intent is being achieved.

B. **Support During Construction.** The design team may be required to provide a variety of assistance during construction. This will include but not be limited to providing clarification of design drawings, making site visits for field inspections such as foundation inspection, contractor submittal reviews and approval, value engineering, responding to requests for information or clarification, and contract modifications. Large projects or those with complex or critical features may have their own support staff assigned to construction management responsibilities, but for small projects without complex or critical features the design staff may also have construction management responsibilities.

C. **Modification of Designs.** Any changes in a feature during construction where there is a deviation from the original design require a technical review by a design team representative who is registered in the appropriate discipline according to D&S HRM 05-01. Revisions will be noted on design drawings by a revision block.

8. **Postconstruction Activities.** Design activities during postconstruction involve reviewing as-built drawings, assisting in the preparation of the construction report and geology report if required, and Designer's Operating Criteria. Other postconstruction design activities will involve: (a) participating in the Operation and Maintenance (O&M) transfer inspection; (b) providing input into O&M manuals; (c) and reviewing/revising as-built drawings.

9. **Accountability and Documentation**. The project leader is responsible for overall coordination of the project, and this includes who does planning and design activities, tracking budgets and expenditures, ensuring planning and design activities deliverables meet project requirements, and proper documentation and records management for the overall project. The design team leader is responsible for overall design activities, and this includes ensuring proper accountability of design activities, proper documentation of design products, and proper records management for the design portion of the project.

APPENDIX 1
SUGGESTED SIMPLIFIED DESIGN ACTIVITY PLAN

Job Name:			Date Submitted:		
JCN:					
Design Team Leader:	Originating Office:		Project Leader:		
Originating Office Contact:					
Complete Service Agreement or Originating Office Approval Obtained? Resource Availability Confirmed by Manager(s)			____ Yes ____ Yes	____ No ____ No	
Schedule	Target Dates		Other Milestones (concept, draft, award, etc.)		
Start:					
Complete:					
Budget : _____ Cost Center	Staff Days		SD Total	$ Nonlabor	
Staff Day Totals					
FY Totals					
Total Budget					
Description and Scope of Work:					
Notes (notation of review, etc.):					
Additional Information Attached (service agreement, letter, fax, telephone memo, copy of e-mail, etc.)?			□ Yes	□ No	

_____ _____
Design Team Leader Design Office Review

_____
Project Leader

APPENDIX 2
SUGGESTED DESIGN ACTIVITY PLAN CHECKLIST

_____
Project Name

Project Leader: _____ Design Team Leader: _____
Cost Authority Number: _____

Proposed Schedule (Fill out only those that apply):
Begin Design: _____
30% Review or Concept C: _____
Value Analysis Study: _____
60% Review or Design C: _____
90% Review or Review C: _____
Book Published: _____
Award: _____
Construction Complete: _____

Proposed Budget: _____
Authorized Amount for Project: _____
Estimate for Design Activities (if available): _____

Activity	**Due Date**	**Responsibility**	**Comment**
1. Sign Checklist	_____	_____	_____
2. Initiate Service Agreement (includes budget, schedule, peer review requirements, and client approval)	_____	_____	_____
3. Formalize Project-Specific Criteria/ Requirements	_____	_____	_____
4. Formalize Design Data Requirements	_____	_____	_____
5. Make Design Data Assignments	_____	_____	_____
6. Evaluate/Perform Value Engineering	_____	_____	_____
7. Determine Procurement Method	_____	_____	_____
8. Perform Real Estate Acquisition	_____	_____	_____
	_____	_____	_____

Activity	Due Date	Responsibility	Comment
9. Perform Utility Relocations			
10. Perform NEPA Compliance	_____	_____	_____
11. Obtain Permits	_____	_____	_____
12. Prepare Final Designs/Specifications	_____	_____	_____
13. Prepares Engineers Estimate	_____	_____	_____
14. Award Contract	_____	_____	_____
15. Construction Management (substantially complete)	_____	_____	_____
16. Prepare DOCs, SOPs, Construction Reports	_____	_____	_____
17. Transfer Facilities to O&M	_____	_____	_____
18. Submit Close-Out/Final Payment	_____	_____	_____

_____ _____

Construction Representative Project Leader

_____ _____

Contracting Officer Design Team Leader