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ENGINEERING AND CONSTRUCTION BULLETIN

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SUBJECT: Technical Lead for E&C Deliverables

CATEGORY: Directive and Policy

1. References:

a. Federal Acquisition Regulation (FAR) Part 36 Construction and Architect – Engineer Contracts, 36.601-4, 14 October 2014

b. Engineer Circular (EC) 1165-2-214, Civil Works Review, 15 December 2012, or successor document

c. Engineer Regulation (ER) 5-1-11, USACE Business Process, 12 January 2007

d. ER 1110-1-12, Quality Management, 30 September 2006

e. ER 1110-2-1150, Engineering and Design for Civil Works Projects, 31 August 1999

f. ER 1110-2-1156, Safety of Dams – Policy and Procedures, 31 March 2014

g. USACE Project Management Business Process (PMBP) Manual, Version 1.0, May 2009

h. CECW-CE Memorandum, Quality Imperatives for Engineering and Construction Products and Services, 2 April 2013

2. Definitions.

a. Current Engineer Regulations use terms such as “Lead Engineer/Architect,” “Engineer-in-Charge” or “Technical Lead” to describe a technical leadership role within each Project Delivery Team (PDT). This ECB uses Technical Lead (TL) to refer to each of these roles.

b. For the purpose of this criterion, “Professional Engineering Services” are analogous to “architect-engineer services” defined by FAR 36.601-4. “...(P)rofessional services of an architectural or engineering nature...that logically or justifiably require performance by registered architects or engineers...”

c. For the purpose of this criterion, “technical quality” refers specifically to the features of Engineering & Construction deliverables governed by quality control and quality assurance procedures. They do not refer to any other deliverable generated by the rest of the PDT.

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3. Purpose.

a. This directive defines the responsibilities of the Technical Lead (TL), which are assigned to one member on each Project Delivery Team (PDT) who serves as the proponent for the project's technical quality. The TL is not a new position and its roles should be performed by personnel currently existing within USACE Districts' and Centers' organizational structure (e.g. design managers, senior designers, etc.).

b. The TL roles do not duplicate those of the Project Manager (PM). This policy establishes a consistent delineation between project management and technical quality responsibilities, and reinforces the need for the TL and PM to collaborate with each other and the rest of the PDT.

4. Background.

a. ER 5-1-11 (para. 7(a), p. 4), "... empowers PDTs with the authority and responsibility for delivering quality products and services." The USACE PMBP Manual addresses these authorities and responsibilities by defining many different roles for the Project Manager, Resource Provider, and PDT (among others) assigned to each project. REF 8020G of the PMBP summarizes the key roles for the Resource Providers, to include "ensuring the quality of the products... delivered by the PDT."

b. ER 1110-2-1150 (para. 17, p. 22) declares that "execution of design and technical quality is the responsibility of engineering [and construction division]... while conforming to schedules, budget and customer expectations." This responsibility is evident through coordination with project management in early planning, as well as ensuring the "work is properly defined and schedules are attainable" which is documented in the Project Management Plan (PMP).

c. ER 1110-1-12 (para. 5-4, p. 5-1) establishes that "[Engineering]... Chiefs are responsible for guiding and ensuring that all technical documents are developed and finalized to result in high quality products."

d. These regulations are interrelated and clearly establish engineering and construction personnel as not only empowered, but required, to make technical decisions as part of the PDT to ensure quality. While District Chiefs of Engineering will retain overall responsibility for technical quality within the District, authorizing the TL to serve as the technical proponent on each PDT is consistent with USACE policies and established best practices.

5. Policy.

a. The District Chiefs of Engineering will assign a Technical Lead (TL) in accordance with Paragraph 7 of this policy. The TL is responsible for ensuring technical quality remains uncompromised through coordination and collaboration with the PM, the rest of the PDT, and stakeholders on all projects that generate E&C deliverables.

b. While the TL serves as the proponent for technical quality on all E&C deliverables, each member of the PDT retains its responsibility for technical quality.

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c. Any proposed change to the project scope, budget, or schedule that may affect the technical quality of E&C deliverables, or execution of quality procedures outlined in the Quality Assurance/Quality Control (QA/QC) portions of the approved Quality Management Plan (QMP), must be coordinated with the TL. These changes must be approved and documented in accordance with the approved Change Management Plan established for the project within the PMP.

d. No decision affecting quality management procedures may be made unilaterally. Conflicts concerning technical quality between the PM and TL must be elevated according to the District established standard operating procedures.

e. Per existing regulations, the Chiefs of Engineering and Construction will collaborate for a final determination in all matters concerning technical quality of E&C deliverables through design and construction.

6. Applicability.

a. This policy applies to all E&C deliverables executed by, or through, USACE labs, centers and districts for all stakeholders.

b. E&C deliverables include, but are not limited to, the generation of and/or contributions to: planning/programming documents; scopes of work and other solicitation documents; construction drawings, specifications, and design analyses; review plans; studies and reports; engineering consideration and information for field personnel; etc.

7. Assignment of TL.

a. The District Chiefs of Engineering will consider the qualification requirements described below and assign a Technical Lead to each project that generates E&C deliverables. This assignment must be documented and included in the Project Management Plan (PMP).

b. Specific circumstances establishing the qualification requirements for personnel to fill the TL role are defined below:

(1) A TL with an active professional registration (i.e. P.E, R.A.) must be assigned to projects with deliverables generated as Professional Engineering Services. The District Chiefs of Engineering determine whether the E&C deliverables “logically or justifiably require performance by registered architects or engineers...” (Ref 1a.).

(2) Projects with deliverables that do not require Professional Engineering Services must be assigned a TL that may or may not be a licensed professional. The size, scope, risk and complexity of each project must be considered when determining the minimum qualifications for the TL assignment in these circumstances.

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(3) In the event that the District Chiefs of Engineering elect to assign non-licensed personnel for projects requiring Professional Engineering Services, he or she must waive this requirement in a written memorandum for the record, document this decision in the PMP, and submit the memo to the Chief of E&C at HQUSACE.

c. When a project contains work performed by multiple E&C disciplines, the TL determination is based on the most appropriate skill-set needed to execute the full scope of the project within the parameters of the project budget and schedule.

d. For projects in which the geographic district has partnered with another district (e.g. reachback work, regional projects), the geographic district's Chief of Engineering will designate which district holds the TL responsibility based on the scale of work for which the PDT is responsible.

8. Roles and Responsibilities. The roles and responsibilities for the Technical Lead include the following:

a. Coordinate with the PM to: ensure proper definition of project scope and schedule; ensure project requirements are understood; establish clear and accurate criteria, and; document guidance and direction for design teams. Facilitate the generation of the PDT design budget, schedule, and deliverables and immediately inform the PM of all issues impacting each of these items.

b. Coordinate with the PM to provide input to the project-specific Quality Management Plan (QMP). Lead the development of product-specific components of the QMP to ensure the technical quality of E&C deliverables. These documents may include a Quality Control Plan (QCP), Quality Assurance Plan (QAP), Quality Assurance Surveillance Plan (QASP), Review Plan (RP), Construction Management Plan (CMP) and/or other necessary quality procedures. Refer to ER 1110-1-12 and the PMBP for more information on these requirements.

c. Ensure the production of technical deliverables from the PDT in accordance with the Project Management Plan (PMP) and district-established Quality Management System (QMS).

d. Ensure that all design deliverable include the authorized project scope (e.g. function, performance, aesthetics, sustainability) and address compliance with all applicable code, policy, and criteria. If approved project scope changes occur during design, provide input to update the QMP and its components and adjust the design budget and schedule accordingly.

e. Assist in the development of the Scope or Work for projects to be completed by AE services contract, as well as provide technical recommendations for the acquisition method, proposal evaluation, and submitted QC Plan. Coordinate technical quality assurance review of AE submitted deliverables for compliance with Contract requirements.

f. Ensure the Designer of Record (DOR) properly utilizes applicable technical criteria required for Design-Build (D-B) contracts. During design submittal reviews, verify that

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construction documents adhere to these criteria and accurately account for all features of work included in the awarded contract.

g. When applicable, ensure design coordination with the appropriate USACE Centers of Standardization (COS), Centers of Expertise (CX) – including, Technical Centers of Expertise (TCX) and Mandatory Centers of Expertise (MCX) – to meet all applicable requirements and criteria.

h. Facilitate and ensure resolution of technical issues and comments among the PDT as they apply to the E&C deliverables. Resolve issues at the lowest appropriate level, but ensure PM and Resource Providers involvement when required.

i. Coordinate with appropriate personnel to provide necessary documents for all applicable reviews and studies required by the QMP. This includes, but is not limited to: QC reviews, Value Engineering studies (when required per ER 11-1-321); Independent Technical Reviews (ITR); Agency Technical Reviews (ATR); Independent External Peer Review (IEPR), and; the Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES) Certificate. Facilitate resolution of technical comments resulting from each review as appropriate.

j. Work with the CAD/BIM Manager to ensure all CAD/BIM related requirements and deliverables are developed in accordance with current criteria and policies. This includes, but is not limited to, development of the BIM Project Execution Plan (PxP), contract documents and record drawings/files.

k. Provide input on technical related source selection criteria for Contractor evaluation. Coordinate input from PDT to the Engineering Considerations and Information for Field Personnel (ECIFP) on each project (ER 1110-1-12, Para 7, p. 7-1). Brief ECIFP and general design conditions to field personnel.

l. Remain the primary design lead for projects during construction in support of the USACE Construction Office. All design related Contract modifications must be coordinated with the TL to the appropriate discipline lead (in-house design) or designer of record (AE-contracted design). Coordinate Engineering attendance for on-site inspections during major features of construction on each project.

9. **Update.** As noted previously, existing policy documents include some reference to the roles described in this ECB. The expansion of these requirements will be included in the next appropriate update to those documents prior the expiration of this ECB.

(Paragraph 10 continues below.)

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10. Points of Contact. HQUSACE points of contact for this ECB are Brandon Tobias, CECW-CE, (202) 761-0505, Chris Westbrook, CECW-CE, (202) 761-7584, and Brian Peckins, CEMP-CI, (202) 761-0488.

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