

REVIEW PLAN

REPLACEMENT of LOWER MITER GATES

P2 # 111562

DEMOPOLIS LOCK AND DAM, ALABAMA

U.S. Army Corps of Engineers

Mobile District

South Atlantic Division

26 February 2015

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**US Army Corps
of Engineers®
Mobile District**

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DEMOPOLIS LOCK AND DAM, ALABAMA**

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REVIEW PLAN

REPLACEMENT of LOWER MITER GATES DEMOPOLIS LOCK AND DAM, ALABAMA

1. INTRODUCTION

a. Purpose

The purpose of this Review Plan (RP) is to describe the technical review process for the replacement of the lower miter gates project at the Demopolis Lock and Dam, Demopolis Alabama. The documents to be reviewed are the Design Documentation Report (DDR) and the proposed technical plans and specifications (P&S). The documents are considered “implementation documents” as identified in Engineering Circular (EC) 1165-2-214, Civil Works Review, dated 15 Dec 2012. The RP is a living document and may change as the project progresses. This RP and the RP approval memo shall be posted to the Mobile District’s website when completed.

U.S. Army Corps of Engineers (Corps) guidance for conduct of this review is contained in EC 1165-2-214. EC 1165-2-214 provides procedures for ensuring the quality and credibility of the Corps decision and implementation documents through an independent review process. It complies with Section 515 of Public Law (P.L.) 106-554 (referred to as the “Information Quality Act”); and the Final Information Quality Bulletin for Peer Review by the Office of Management and Budget (referred to as the “OMB Peer Review Bulletin”). It also provides guidance for the implementation of Section 2034 of WRDA 2007 (P.L. 110-114).

b. Demopolis Lock and Dam Project Description and Information

Demopolis Lock and Dam is located on the Tombigbee River, about 3.6 miles below the confluence of the Tombigbee River and the Black Warrior River, at the navigation mile 213.2 above the foot of Government Street in Mobile, Alabama. The project is located 2.4 miles west of the town of Demopolis in Marengo and Sumter counties, Alabama. The project was authorized under provision of the River and Harbor Act approved March 2, 1945, Public Law 14, 79th Congress. The existing project was completed in 1962.

Demopolis project consists of a navigational lock and a fixed-crest spillway across the channel. The lock is located adjacent to the left bank. The fixed-crest spillway is 1,450 feet long and consists of a channel section, which spans the original riverbed, and an overbank section, which ties into a concrete gravity abutment wall. An emergency overflow dike on the right bank ties the structure into natural ground. The lock has chamber dimensions of 110 feet by 600 feet, and a maximum lift of 40 feet and a depth of 13 feet over the miter sills. The 47.9 mile long lake created by this dam covers 10,000 acres and has a capacity of 120,000 acre feet at normal pool elevation 73.0 National Geodetic Vertical Datum (NGVD), and a 9 x 200 foot navigation channel extending its entire length.

c. Information for Review

This Review Plan covers the design of a new set of lower miter gates for the navigation lock. The original miter gates have functioned well and therefore the original design of the miter gates will be used as the basis for the design of a new set of gates. The new gates' design will incorporate the appropriate current design requirements contained in ETL 1110-2-584, dated 30 June 2014. Once completed, the design will be placed on the shelf until funding is made available. The acquisition strategy for this gate project is to award a supply contract for the fabrication and delivery of the gates to the Demopolis Lock. The existing miter gates will be removed and new gates installed by the Operations and Maintenance Contractor during a scheduled un-watering of the lock. As identified above, the documents to be reviewed under this RP are the DDR and P&S.

d. Real Estate Requirements

There are no additional Real Estate or perpetual easement acquisitions required for the project.

e. Project Delivery Team

The Project Delivery Team (PDT) is comprised of those individuals involved directly in the development of the implementation documents. The individual contact information and disciplines of the Mobile District PDT are included in Attachment 2 of this document.

f. Levels of Review

This Review Plan (RP) describes the levels of review and the anticipated review process for the documents to be produced. All levels of review are addressed in this RP: District Quality Control (DQC), Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES), and Agency Technical Review (ATR), Policy and Legal Compliance Review, and Independent External Peer Review (IEPR) in coordination with the Risk Management Center (RMC).

g. Review Team

Review Management Office: The USACE South Atlantic Division (SAD), the Major Subordinate Command (MSC), is the Review Management Organization (RMO) for this project. Contents of this review plan have been coordinated with SAD and the Risk Management Center (RMC). The RMC's concurrence of SAD functioning as the RMO is documented via the RMC's endorsement of this RP. Informal coordination with SAD will occur throughout the project development, including briefings to the SAD Dam Safety Committee and Program Review Board updates. In-Progress Review (IPR) team meetings with the SAD, and HQ will be scheduled on an "as needed" basis to discuss programmatic, policy, and technical matters.

Agency Technical Review Team: At a minimum, the following disciplines should be represented on the ATR team. All reviewers on the ATR team shall be certified in the Corps of Engineers Reviewer Certification and Access Program (CERCAP) system.

Required ATR Team Expertise: The ATR team will be chosen based on each individual's qualifications and experience with similar projects.

ATR Lead: The SAD will assign the ATR lead. The ATR Lead is a senior professional with extensive experience in preparing Civil Works documents and conducting ATRs (or ITRs). The lead has the necessary skills and experience to lead a virtual team through the ATR process. The ATR lead may also serve as a reviewer for a specific discipline, in this case, Structural Engineering.

Structural Engineer: Team member should have at least 10 years of experience in the analysis, design, and fabrication of large hydraulic steel structures and shall be very familiar with the design criteria contained in ETL 1110-2-584, Design of Hydraulic Steel Structures, 30 June 2014.

2. REQUIREMENTS

a. Reviews

The review of all work products will be in accordance with the requirements of EC 1165-2-214 by following the guidelines established within this review plan.

i. District Quality Control: The DDR and P&S produced will undergo District Quality Control (DQC). DQC is the review of basic science and engineering work products focused on fulfilling the project quality. Major subordinate command (MSC) and District quality management plans address the conduct and documentation of this fundamental level of review. DQC will be managed by SAM in accordance with ER 1110-1-12, Engineering & Design Quality Management, EC 1165-2-214, Civil Works Review Policy, and the District Quality Management Plan. The DQC will include quality checks and reviews, supervisory reviews, PDT reviews, and BCOES reviews required by ER-1110-1-12. The DQC review will be completed prior to submitting documents for ATR. Documentation of the DQC review as contained in DrChecks will be certified during the ATR which will assess that DQC activities were sufficient and documented.

ii Engineering and Construction, Biddability, Construct Ability, Operability, Environmental and Sustainability (BCOES): The value of BCOES reviews is based on minimizing problems during the construction phase through effective checks performed by knowledgeable, experienced personnel prior to advertising for a contract. Biddability, Constructability, Operability, Environmental, and Sustainability requirements must be emphasized throughout the planning and design processes. This will help to ensure that the government's contract requirements are

clear, executable, and readily understandable by private sector bidders or proposers. It will also help ensure that the construction may be done efficiently and in an environmentally sound manner, and that the construction activities and projects are sufficiently sustainable. Finally, effective BCOES reviews of design and contract documents will reduce risks of cost and time growth, unnecessary changes and claims, as well as support safe, efficient, sustainable operations and maintenance by the facility users and maintenance organization after construction is complete.

iii. Agency Technical Review (ATR): As required by EC 1165-2-214, the implementation documents produced as part of this effort will undergo ATR to ensure consistency with established criteria, guidance, procedures, and policy. ATR is an in-depth review, managed within USACE, and conducted by a qualified team outside of the home district that is not involved in the day-to-day production of the project/product. The purpose of this review is to ensure the proper application of clearly established criteria, regulations, laws, codes, principles and professional practices. The ATR will assess whether the analyses presented are technically correct and comply with published Corps guidance, that design plans and specifications and supporting analyses are clear, constructible, environmentally sustainable, operable, and maintainable.

The ATR team will consist of the individuals that represent the significant disciplines involved in the accomplishment of the work. ATR will be managed within the Corps and conducted by senior Corps personnel outside of the Mobile District that are not involved in the day-to-day production of the project. DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. The documents to be reviewed are the DDR and the proposed P&S. The original miter gate contract drawings will be provided to the ATR Team for its information and use in review of the new documents. The PDT will evaluate comments in DrChecks and revise the documents as necessary. The ATR leader will be from outside the MSC, and must complete a statement of technical review for all final products and final documents. By signing the ATR certification, the district leadership certifies policy compliance of the document and also that the DQC activities were sufficient and documented.

iv. Independent External Peer Review: Independent External Peer Review (IEPR) is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of the Corps is warranted. This project is in the implementation phase; thus, the Type I IEPR, which is related to decision documents, is not required. Based on criteria contained in EC 1165-2-214, the District Chief of Engineering, as the Engineer-In-Responsible-Charge, does not recommend a Type II IEPR Safety Assurance Review (SAR). Innovative materials or novel engineering methods will not be used. Also, the project has no reduced or overlapping design construction schedule. As previously indicated, the DDR and P&S will be based on the design of the original lock lower miter gates which have functioned well and met all necessary life safety concerns. The new miter gate design will incorporate the appropriate current design requirements contained in ETL 1110-2-584 and thus ensure that the current design requirements are met. Thus this design effort represents a replacement-in-kind following the latest design guidance. Coordination between the District and the RMC has resulted in the decision that the

Federal action is not justified by life safety, and as a replacement-in-kind does not increase any existing significant threat to human life. The RMC agrees with the recommendation to forego a Type II IEPR.

v. Policy and Legal Compliance Review: Policy and Legal Compliance Review is required for decision documents. Since this RP is not a decision document it does not require a Policy and Legal Compliance Review. The project consists of the replacement of existing components , and therefore presents no environmental implications. Construction will comply with applicable industry codes and EM 385-1-1, USACE Safety and Health Requirements. All contract documents and supporting environmental documents will be reviewed by the Mobile District Office of Counsel prior to contract award.

vi. Peer Review of Sponsor In-Kind Contributions: There will be no in-kind contributions associated with the documents addressed in this RP.

b. Approvals

The MSC for this RP is the South Atlantic Division. The MSC Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input (involving the Mobile District, MSC, RMC and HQUSACE members) as to the appropriate scope and level of review for the study and endorsement by the RMC. Like the PMP, the Review Plan is a living document and may change as the study progresses. The District is responsible for keeping the Review Plan up to date. Significant changes to the Review Plan (such as changes to the scope and/or level of review) should be re-approved by the MSC Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commanders' approval memorandum, will be posted on the District's webpage and linked to the HQUSACE webpage.

3. GUIDANCE AND POLICY REFERENCES

- EC 1165-2-214, Civil Works Review, 15 Dec 2012
- ER 5-1-11, USACE Business Process, 1 Nov 2006
- ER 415-1-11, Engineering and Construction, Biddability, Construct Ability, Operability, Environmental and Sustainability (BCOES) Reviews, 1 Jan 2013
- ER 1110-1-12, Engineering and Design Quality Management, 31 March 2011(Change 2)
- ER 1110-2-1156, Safety of Dams – Policy and Procedure, 31 Mar 2014
- ETL 1110-2-584, Design of Hydraulic Steel Structures, 30 June 2014

4. SUMMARY OF REQUIRED LEVELS OF REVIEW

In accordance with the review process described in EC1165-2-214, Civil Works Review Policy, this Review Plan recommends the DQC and ATR as the appropriate level of review. A BCOES review will also be prepare as part of the Mobile District Standard Operating Procedure.

5. REVIEW SCHEDULE AND COSTS

The cost for DQC, BCOE, and ATR, is estimated to be approximately \$5,000, \$5,000, and \$18,000 respectively. The documents to be reviewed and scheduled dates for review are as follows:

Documents	Review	Schedule Dates
100% Unreviewed P&S	DQC	3 Aug 2015
Final P&S, and DQC Cmts	BCOES	12 Aug 2015
Final P&S, and DQC and BCOES Cmts	ATR	24 August 2015

6. PUBLIC PARTICIPATION

The review plan will be made accessible to the public for thirty (30) days through the Mobile District website link <http://www.sam.usace.army.mil/>. (Names and other personal information will be removed prior to posting to the web). Public review of the review plan can begin as soon as it is approved by the Division Commander and posted by the Mobile District. Comments made by the public will be available to the review team.

7. EXECUTION PLAN

a. District Quality Control

i General: DQC will be conducted after completion of the final plans and specifications. DQC requires both supervisory oversight and District technical experts. The District will conduct a robust DQC in accordance with EC 1165-2-214, Civil Works Review, the District's Quality Management Plan, and ER 1110-2-12, Quality Management. Documentation of DQC activities is required and will be in accordance with the District Quality manuals. Comments and responses from DQC will be available for the ATR team to review through ProjNet DrChecks.

ii DQC Review and Control: The District Project Manager will schedule DQC review meetings. The in-progress review meetings will include PDT members from Dam Safety, Structures, General Engineering, Cost Engineering, Project Management, and Operations. DQC Review will be conducted on the completed final plans and specifications and will include comments, backcheck, and revisions. ProjNet DrChecks review software will be used to document reviewer comments, responses and associated resolutions. Comments should be limited to those that are required to ensure the adequacy of the product.

iii BCOES Review and Certification: Final plans and specifications, and comments from the DQC review shall be reviewed by the Tuscaloosa Area Office (SAMOP-B) who will administer the Awarded Supply Contract. Again, ProjNet DrChecks review software will be used to document reviewer comments, responses, and associated resolutions.

b. Agency Technical Review

i. General: ER 1110-2-1156, Chapter 9 describes the purpose, process, roles and responsibilities for an ATR. The ATR will be conducted by a qualified team from outside of the home district. Paragraph 9.c. (2) addresses “Other Work Products” in which the MSC serves as the RMO. The ATR Lead, and ATR reviewers will be selected by the RMO. For this project the ATR team (Attachment 4) will consist of the ATR Lead and a level 3 structural engineer.

i. ATR Review and Control: Reviews will be conducted in a fashion which promotes dialogue regarding the quality and adequacy of the Final Plans and Specifications. The level of effort for each ATR reviewer is expected to be between 16 and 32 hours. DrChecks review software will be used to document reviewer comments, responses and associated resolutions. Comments should be limited to those that are required to ensure the adequacy of the product. The MSC in conjunction with the District, will prepare the charge to the reviewers, containing instructions regarding the objective of the review and the specific advice sought. A kick off meeting will be held with the ATR team to familiarize reviewers with the details of the project.

The four key parts of a review comment will normally include:

- (1) The review concern – identify the product’s information deficiency or incorrect application of policy, guidance, or procedures.
- (2) The basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not been properly followed.
- (3) The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability.
- (4) The probable specific action needed to resolve the concern – identify the action(s) that the PDT must take to resolve the concern.

In some situations, especially addressing incomplete or unclear information, comments may seek clarification in order to then assess whether further specific concerns may exist. The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical coordination, and lastly the agreed upon resolution. The ATR team will prepare a Review Report which includes a summary of each unresolved issue; each unresolved issue will be raised to the vertical team for resolution. Review Reports will be considered an integral part of the ATR documentation and shall also:

- (1) Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer.

(2) Include the charge to the reviewers prepared by the RMO in accordance with EC 1165-2-214.

(3) Describe the nature of their review and their findings and conclusions.

(4) Include a verbatim copy of each reviewer's comments and the PDT's responses.

ATR may be certified when all ATR concerns are either resolved or referred to HQUSACE for resolution and the ATR documentation is complete. Certification of ATR should be completed, based on work reviewed to date, for the final report. A draft certification is included in Attachment 1.

c. Independent External Peer Review – Not Required.

8. REVIEW PLAN POINTS OF CONTACT – See Appendix A

ATTACHMENT 1

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the <type of product> for <project name and location>. The ATR was conducted as defined in the project’s Review Plan to comply with the requirements of EC 1165-2-209. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer’s needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrCheckssm.

SIGNATURE

Name
 ATR Team Leader
Office Symbol/Company

 Date

SIGNATURE

Name
 Project Manager (home district)
Office Symbol

 Date

SIGNATURE

Name
 Architect Engineer Project Manager¹
Company, location

 Date

SIGNATURE

Nathan Snorteland
 Director, RMC

 Date

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: Describe the major technical concerns and their resolution. As noted above, all concerns resulting from the ATR of the project have been fully resolved.

SIGNATURE

Name
 Chief, Engineering Division (home district)
Office Symbol

 Date

SIGNATURE

Name
 Dam Safety Officer² (home district)

Office Symbol

 Date

¹ Only needed if some portion of the ATR was contracted
² Only needed if different from the Chief, Engineering Division.

