DEPARTMENT OF THE ARMY
MISSISSIPPI VALLEY DIVISION, CORPS OF ENGINEERS
P.O. BOX 80
VICKSBURG, MISSISSIPPI 39181-0080

REPLY TO
ATTENTION OF:

16 APRIL 2013

CEMVD-PD-KM

MEMORANDUM FOR

Commander, Memphis District
Commander, Vicksburg District
Commander, New Orleans District

SUBJECT: Approval and Transmittal of the Review Plan for the MR&T Mainline Levee Enlargement and Seepage Control Project

1. Reference:

a. EC 1165-2-214, 15 December 2012, Civil Works Review.

b. Memorandum, CEIWR-RMC, 27 March 2013, subject: Risk Management Center Endorsement – Mississippi River and Tributaries Project, Mainline Levee Enlargement and Seepage Control Project Regional Review Plan (encl 1).

2. MVD staff has reviewed the subject review plan (encl 2). The review plan was also reviewed and endorsed by the Risk Management Center. The review plan was developed in accordance with reference 1.a., which establishes an accountable, comprehensive, life cycle review strategy for review of all civil works projects from initial planning through design, construction and Operation, Maintenance, Repair, Replacement and Rehabilitation.

3. The subject review plan is approved. Non-substantive changes to this review plan do not require further approval.

4. Each District should each post the review plan to its website and provide a link to the Risk Management Center for its use.

5. The MVD point of contact for this action is Mr. Rick Robertson, CEMVD-PD-KM, (601) 634-5067.

2 Encls

EDWARD E. BELK, JR., P.E., SES
Director of Programs

DEPARTMENT OF THE ARMY
RISK MANAGEMENT CENTER, CORPS OF ENGINEERS
12596 WEST BAYAUD AVE, SUITE 400
LAKEWOOD, CO 80228

REPLY TO
ATTENTION OF

CEIWR-RMC

27 March 2013

MEMORANDUM FOR: Commander, Mississippi Valley Division, ATTN: CEMVD-CE

SUBJECT: Risk Management Center Endorsement – Mississippi River and Tributaries Project, Mainline Levee Enlargement and Seepage Control Project Regional Review Plan

1. The Risk Management Center (RMC) has reviewed the Regional Review Plan (RP) for MR&T, dated 28 February 2013, and concurs that this RP complies with the current peer review policy requirements outlined in EC 1165-2-214 "Civil Works Review Policy", dated 15 December, 2012.

2. This review plan was prepared by the Mississippi Valley Division and the RMC, coordinated with the Flood Risk Management Planning Center of Expertise, and all review comments have been satisfactorily resolved. The RMC concurs with the use of the MVD Dam and Levee Production Center as the RMO for this suite of projects.

The RMC concurs that a Type I IEPR is not required for this effort. The MVD DSPC will be the RMO for the Type II IEPR. Please send copies of all ATR certifications and IEPR certifications to the RMC.

3. The RMC clears this document to be approved by the MSC Commander. Upon approval of the RP, please provide a copy of the approved RP, a copy of the MSC Commander's approval memorandum, and a link to where the RP is posted on the MSC website to Tom Bishop, RMC Senior Review Manager (thomas.w.bishop@usace.army.mil).

4. Thank you for the opportunity to assist in the preparation of this RP. Please coordinate all aspects of the Agency Technical Review, the Independent External Peer Review (as appropriate), and Model Certification efforts defined in the RP. For further information, please contact Mr. Bishop at 303-963-4556.

Sincerely,

NATHAN J. SNORTELAND, P.E.
Director
Risk Management Center

CF:
CEIWR-RMC (Mr. Snorteland)
CEMVD-CE (Division Quality Manager)

Encl

MISSISSIPPI RIVER AND TRIBUTARIES PROJECT

MAINLINE LEVEE ENLARGEMENT AND SEEPAGE CONTROL PROJECT

REGIONAL PROJECT REVIEW PLAN

Mississippi Valley Division

Memphis District
Vicksburg District
New Orleans District

1 April 2013

Table of Contents

MISSISSIPPI RIVER AND TRIBUTARIES PROJECT
MAINLINE LEVEE ENLARGEMENT AND SEEPAGE CONTROL PROJECT FEATURE
REVIEW PLAN
Reviews of documents and process

1. General. This Review Plan will be performed in accordance with the EC 1165-2-214 dated 15 December 2012. Design and construction activities associated with the Mainline Mississippi River Levee Enlargement and Seepage Control Project (MRL Construction) will be reviewed according to the process described in this document. Documents and processes related to the feature are discussed below.

2. Program Description. The Flood Control Act of May 15, 1928, authorized the Mississippi River and Tributaries (MR&T) Project. The components of the MR&T Project are: Mississippi River Levees, Channel Improvement, South Bank Arkansas and South Bank Red River Levees, the Atchafalaya Basin, Atchafalaya Basin Floodway System, Old River Control Complex, Yazoo Backwater Levee and a few miscellaneous items.

The Mississippi River Commission (MRC) has a proud heritage that dates back to its creation by an act of Congress on June 28, 1879. Congress established the Commission with the mission to transform the Mississippi River into a reliable commercial artery, while reducing the risk of flooding to adjacent towns and fertile agricultural lands. The 1879 legislation that created the Mississippi River Commission granted the body extensive planning authority and jurisdiction on the Mississippi River stretching from its headwaters at Lake Itasca to the Head of Passes, near its mouth at the Gulf of Mexico. The Mississippi River Commission quickly assumed the role of an active Federal agent capable of transcending the regional issues that had previously hampered the development of a more effective river improvement system. The Commission began improving the navigation channel to promote commerce, setting standards for levee construction and holding public hearings to give local interests a greater voice in shaping federal policy. The MR&T Project in the alluvial valley between Head of Passes, LA, and Cape Girardeau, MO, provides flood risk management by means of levees, floodwalls, floodways, reservoirs (in Yazoo and St. Francis Basins), bank stabilization and channel improvements in and along the river and its tributaries and outlets insofar as affected by backwater of the Mississippi River. When completed, 23,621 square miles will be protected from the Mississippi River project flood. The project also authorizes a 12- by 300-foot navigation channel between Baton Rouge, LA, and Cairo, IL; for salinity control structures; and for channel realignment and improvement including bank stabilization and dikes to reduce flood heights, control the natural tendency of the river to lengthen by meandering and protect levees from being destroyed by caving banks. Construction of the existing project began in 1928 and has continued throughout ensuing years. Although a 12- by 300-foot channel is authorized, a 9- by 300-foot channel is maintained. The additional three feet of depth was determined to not meet administration policy. Consequently, the deeper channel has never been funded.

The Mississippi River Commission listens to the concerns of partners and stakeholders in the Mississippi Valley, inspecting the challenges posed by the river and partnering to find sustainable engineering solutions to those challenges through high-water and low-water inspection trips annually. The official record of the Proceedings of the Mississippi River Commission, complete

with recorded hearings of public meetings, copies of signed formal statements provided by the public, executive summaries of the Proceedings and other documents of significance are kept on file in the Office of the President in Vicksburg, MS.

Authorized operations of the Commission below Cape Girardeau are conducted by District Engineers of New Orleans, Vicksburg, Memphis and St. Louis Districts within the areas described above, in accordance with approved directives and programs and congressional appropriations.

Potential impacts to fish and wildlife species or their habitat and to cultural, historic or tribal resources are addressed in the 1998 Mississippi River Levee Supplemental Environmental Impact Statement. Endangered or threatened species in the lower river include the interior least tern and the pallid sturgeon.

The components of the MR&T Project are designed to convey the Project Design Flood (PDF) flows through the Valley to the Gulf of Mexico. These flows were determined by the National Weather Service in 1956 to be the largest flows with a reasonable chance of occurrence in the season when floods are likely to occur over the Mississippi River Basin. After the 1973 Flood, the PDF flows were reviewed and were found to be appropriate for the project. The 1973 Flood did indicate that the channel and overbank had lost some conveyance capacity. A flowline study was initiated following the 1973 Flood. The results of this study resulted in a new Project Design Flood Flowline. This flowline, the Refined 1973 MR&T Project Flood Flowline, is the basis for the levee enlargement and seepage control construction work currently in progress. The 2011 Flood, which was larger than the 1973 Flood, indicated some vulnerabilities in the system. One vulnerability is the potential for excessive seepage and piping associated with prolonged extreme flood stages. Others include the stage-discharge relationship and the effect on operation of the system.

In the lower reaches of the river, primarily through the New Orleans reach where the levees are extremely close to top bank of the river, the riverside slopes of the levees are being armored with concrete slabs to prevent damage from waves generated by wind and navigation traffic.

3. References.

a. EC 1165-2-214, Water Resources Policies and Authorities. Civil Works Review, 15 December 2012.

b. ER 5-1-1, Project Management Business Process, 1 November 2006. http://140.194.76.129/publications/eng-regs/er5-1-11/entire.pdf

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

d. ER 1110-1-12 Quality Management, 21 June 2006. http://140.194.76.129/publications/eng-regs/er1110-1-12/entire.pdf

e. ES-08011 QA-QC Process for Study-Design.
https://kme.usace.army.mil/CE/QMS/QMS%20Documents/2007-10/08011%20QC-QA%20Processes%20for%20Study-Design%20Phase.DOC

f. PMBP Manual, Proc 2000 PMP/PgMP Development.
http://bp.usace.army.mil/robo/projects/pmbp_manual/PMBP_Manual/proc2000.htm

g. PMBP Manual, REF8008G Quality Management Plan.
http://bp.usace.army.mil/robo/projects/pmbp_manual/PMBP_Manual/REF8008G.htm

h. Armoring Team PgMP (DRAFT), September 2009

i. Hurricane Storm Damage Risk Reduction System PgMP, June 2010.

j. Memorandum, LMVD-WH, 2 May 1978, subject: Refined 1973 MR&T Project Design Flowline.

k. The Mississippi River Mainline Levees Enlargement and Seepage Control Project Report Environmental Impact Statement, 1976.

l. The Mississippi River Mainline Levees Enlargement and Seepage Control Project Report Supplemental Environmental Impact Statement, 1998.

4. Requirements. This review plan was developed in accordance with EC 1165-2-214, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction and operation, maintenance, repair, replacement and rehabilitation (OMRR&R).

5. Plan for Review.

a. The Dam and Levee Safety Production Center (DLSPC) will serve as the Review Management Organization (RMO).

b. MRL construction items prepared for award in FY13 will be reviewed according to this document. These items are as follows:

(1) MVM; Nash, MO Parcel 4 Relief Wells, RTA 14 June 2013.

(2) MVM; Cairo, IL Slope Flattening, RTA 14 June 2013.

(3) MVK; Item 509-L, RTA 23 May 2013.

(4) MVN; Jefferson Heights, RTA August/September.

c. Work products requiring review include, but are not limited to the following:

(1) Levee Enlargement Plans and Specifications (P&S).

(2) Seepage Control Measures P&S.

(3) Levee Armoring P&S.

(4) Engineering analysis documentation associated with above products.

d. Levels of Review.

(1) Design Quality Control (DQC). Each District's Mississippi River Levee Senior Project Manager (MRL PM) in conjunction with the chief of the engineering function will submit the District's work products, i.e., levee enlargement/seepage control measures/levee armoring P&S to personnel in the District office not involved in development of those plans for review and comment. This review team will be composed of senior members of the hydraulics and hydrology, design, geotechnical, operations and construction disciplines.

(a) Documentation. Comments and the resolution to those comments will be put in DrChecks. Each District's MRL PM will prepare a report discussing the review activities, including personnel and disciplines, and briefly discussing any significant comments. The report will include documentation of any clearance needed to advertise or start construction.

(b) Submittal. The report will be submitted to the MVD MRL Coordinator and MVD MR&T Program Manager.

(2) Agency Technical Review (ATR). The RMO will assemble an ATR team composed of appropriately qualified members to include an ATR team leader from outside the Major Subordinate Command. The ATR will take place after completion of the District's DQC. The District MRL PM in conjunction with the chief of the engineering function will submit the work products to the ATR team leader. The leader of the ATR team will complete the statement shown as Appendix A indicating completion of the review and resolution of comments.

(a) Documentation. Each ATR member will enter comments into DrChecks for review and resolution. Comments and discussion will be included in the report developed by the ATR team leader.

(b) Submittal. The report will be submitted to the MVD MRL Coordinator and MVD MR&T Program Manager within 60 days after receipt of the work products.

(c) The MVD MRL Coordinator will submit the report to the District MRL PM.

(3) Type II Independent External Peer Review (IEPR). The RMO will assemble an IEPR team composed of appropriately qualified members. The IEPR team will review the consistency of application of design criteria and guidance across project reaches (inter-district).

For the items listed in Paragraph 5.b., the MVD MRL Coordinator will furnish the appropriate material from the items listed in Paragraph 5.c. to the IEPR team. The IEPR team leader will complete the statement shown as Appendix B indicating completion of the review and resolution of comments.

(a) Documentation: The IEPR team leader will prepare a report discussing all comments and the resolution to those comments by each team member.

(b) Submittal. The report will be submitted to the MVD MRL Coordinator and MVD MR&T Program Manager.

(c) The MVD MRL Coordinator will submit the report to the District MRL PM.

e. Future items will be reviewed as indicated by the review plan shown as Appendix C.

6. Objectives of Review.

a. The project meets the Government's scope, intent and quality objectives.

b. Design concepts are valid, feasible, safe, functional and constructible.

c. Appropriate methods of analysis were used and basic assumptions are valid and used for the intended purpose.

d. The source, amount and level of detail of the data used in the analyses are appropriate for the complexity of the project.

e. The project complies with accepted practice and design criteria within the industry.

f. All relevant engineering and scientific disciplines have been effectively integrated.

g. Content is sufficiently complete for the current phase of the project and provides an adequate basis for future development effort.

h. Project documentation is appropriate and adequate for the project phase.

7. Review Management Organization (RMO) Coordination. The RMO is responsible for managing the overall peer review effort described in this review plan. The Dam and Levee Safety Production Center will serve as the RMO. The Mississippi Valley Division will coordinate and approve the review plan. Each District will post the approved review plan on its public website.

8. Point of Contact. The technical point of contact for this review plan is the MVD MRL Coordinator, Kent Parrish. The leaders of the ATR and IEPR teams will serve as the point of contact and liaison between the reviewers and the PDT's and MVD.

Appendix A

STATEMENT OF TECHNICAL REVIEW
COMPLETION OF QUALITY ASSURANCE REVIEW AND AGENCY
TECHNICAL REVIEW

The Mississippi Valley Division has completed the Agency Technical Review of Item _____ of the MRL Enlargement and Seepage Control Project in the _____ District. Notice is hereby given that (1) a Quality Assurance review has been conducted as defined in the Quality Assurance Plan and (2) an agency technical review that is appropriate to the level of risk and complexity inherent in the project, has been conducted as defined in the project's Quality Management Plan. During the agency technical review, 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 result, including whether the product meets the customer's needs consistent with law and existing Corps policy. The review also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. The agency technical review was accomplished by appropriate personnel from _____, led by _____. All comments resulting from QA and ATR have been resolved.

_____ _____
ATR Team Leader Date

_____ _____
Review Management Organization Date

_____ _____
MVD MRL Coordinator Date

_____ _____
MVD MR&T Program Manager Date

CERTIFICATION OF QUALITY ASSURANCE REVIEW AND AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows:

As noted above, all concerns resulting from agency technical review of the project have been fully resolved.

_____ _____
MVD Chief, Engineering & Construction Date

_____ _____
MVD Chief, Operations Date

Appendix B

USACE STATEMENT OF TECHNICAL REVIEW
COMPLETION OF INDEPENDENT EXTERNAL PEER REVIEW

The Independent External Peer Review (IEPR) Team has completed the IEPR of Item _____ of the MRL Levee Enlargement and Seepage Control Project. Notice is hereby given that an IEPR has been conducted in accordance with the requirements of EC 1165-2-214. The review was appropriate to the level of risk and complexity inherent in the project. During the IEPR, 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 result, including whether the product meets the customer's needs consistent with law and existing US Army Corps of Engineers policy. The IEPR made the determination that the Quality Control activities employed appear to be appropriate and effective. All comments resulting from this IEPR have been resolved.

_____ _____
IEPR Team Leader Date

_____ _____
Review Management Organization Date

CERTIFICATION OF INDEPENDENT EXTERNAL PEER REVIEW

Significant concerns and the explanation of the resolution are as follows:

As noted above, all concerns resulting from independent external peer review of the project have been fully resolved.

_____ _____
MVD Chief, Engineering & Construction Date

_____ _____
MVD Chief, Operations Date

Appendix C

MVD Model Review Plan
for the
Mississippi River and Tributaries Project

Mainline Levee Enlargement and Seepage Control Project

Project Name and Location

Home District

MSC Approval Date: *(enter date of approval, or state "Pending" if not yet approved)*
Last Revision Date: *(enter date of last revision or "none" if no changes since last approved by MSC)*

NOTE: This MVD Model Review Plan may be used for projects consistent with *the criteria presented in Paragraph 1.b. of the plan and accompanying Checklist. If these criteria are not met, a project specific review plan must be prepared in accordance with EC 1165-2-214.* Required model review plan text is provided in normal black font and should not be changed. Areas in the RP where project specific information must be added is shown in *underlined blue italic font*. Supplemental information is shown in red text in a text box (like this note) and should be **deleted** in the final review plan. You may need to adjust page breaks, update page numbers in Table of Contents, and adjust header and footer information in your final RP.

DELETE THIS TEXT BOX BEFORE FINALIZING THE REVIEW PLAN.

US Army Corps of Engineers ®

Review Plan
Using the MVD Model Review Plan
Project Name and Location

Table of Contents

REVIEW PLAN
Project Name and Location

1. General.

a. Purpose. This Review Plan defines the scope and level of peer review for the *<ENTER project name and location* products. *<INCLUDE the Products included for review, e.g. Project Factsheet; an environmental and cultural assessment; cost estimate; economic analysis; hydraulic and hydrologic analysis; geotechnical analysis; real estate plan; and drawings and specifications. This Review Plan can be used for decision documents and/or implementation documents.>* The products for review are as follows:

b. Requirements. This review plan was developed in accordance with EC 1165-2-214, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction and operation, maintenance, repair, replacement and rehabilitation (OMRR&R).

c. References. Reference materials are shown in the regional project review plan.

2. Review Management Organization (RMO) Coordination. The RMO is responsible for managing the overall peer review effort described in this review plan. The Dam and Levee Safety Production Center will serve as the RMO. The Mississippi Valley Division will coordinate and approve the review plan. The District will post the approved review plan on its public website.

3. Project Information.

4. District Quality Control (DQC). The District's Mississippi River Levee Senior Project Manager (MRL PM) in conjunction with the chief of the engineering function will submit its work products, i.e., levee enlargement/seepage control measures/levee armoring plans and specifications (P&S) to personnel in the District office not involved in the development of those plans for review and comment. This review team will be composed of senior members of the hydraulics and hydrology, design, geotechnical, operations and construction disciplines.

a. Documentation. Comments and the resolution to those comments will be put in DrChecks. Each District's MRL PM will prepare a report discussing the review activities, including personnel and disciplines, and briefly discussing any significant comments. The report will include documentation of any clearance needed to advertise or start construction.

b. Submittal. The report will be submitted to the MVD MRL Coordinator and MVD MR&T Program Manager.

5. Agency Technical Review (ATR). The RMO will assemble an ATR team composed of appropriately qualified members to include an ATR team leader from outside the Major

Subordinate Command (MSC). The ATR will take place after completion of the District's DQC. The District MRL PM in conjunction with the chief of the engineering function will submit the work products to the ATR team leader. The leader of the ATR team will complete the statement shown as Attachment A indicating completion of the review and resolution of comments.

a. Documentation. Each ATR member will enter comments into DrChecks for review and resolution. Comments and discussion will be included in a report developed by the ATR team leader.

b. Submittal. The report will be submitted to the District's MRL PM within 60 days after receipt of the work products.

c. The MRL PM will submit the report to the MVD MRL Coordinator and MVD MR&T Program Manager.

6. Independent External Peer Review (IEPR). The RMO will assemble an IEPR team composed of appropriately qualified members. The IEPR team will review the consistency of application of design criteria and guidance across project reaches (inter-district). The District MRL PM will furnish the appropriate work products to the leader of the IEPR team. The IEPR team leader will complete the statement shown as Attachment B indicating completion of the review and resolution of comments.

a. Documentation. The IEPR team leader will prepare a report discussing all comments and the resolution to those comments by each team member.

b. Submittal. The report will be submitted to the District MRL PM 60 days after receipt of the work products.

c. The MRL PM will submit the report to the MVD MRL Coordinator and MVD MR&T Program Manager.

7. Review Plan Points Of Contact. The points of contact for this review plan are the MRL PM for the _____ District and the MVD MRL Coordinator, Kent Parrish.

Attachment A

STATEMENT OF TECHNICAL REVIEW
COMPLETION OF QUALITY ASSURANCE REVIEW AND AGENCY TECHNICAL REVIEW

The _____ District has completed the Agency Technical Review of Item _____ of the MRL Enlargement and Seepage Control Project in the _____ District. Notice is hereby given that (1) a Quality Assurance review has been conducted as defined in the Quality Assurance Plan and (2) an agency technical review that is appropriate to the level of risk and complexity inherent in the project, has been conducted as defined in the project's Quality Management Plan. During the agency technical review, 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 result, including whether the product meets the customer's needs consistent with law and existing Corps policy. The review also assessed the DQC documentation and made the determination that the DQC activities employed appear to be appropriate and effective. The agency technical review was accomplished by appropriate personnel from _____, led by _____. All comments resulting from QA and ATR have been resolved.

_____ _____
ATR Team Leader Date

_____ _____
Review Management Organization Date

_____ _____
District MRL PM Date

CERTIFICATION OF QUALITY ASSURANCE REVIEW AND AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows:

As noted above, all concerns resulting from agency technical review of the project have been fully resolved.

_____ _____

Chief, Engineering/Construction Date

_____ _____

Deputy for Project Management Date

Attachment B

USACE STATEMENT OF TECHNICAL REVIEW
COMPLETION OF INDEPENDENT EXTERNAL PEER REVIEW

The Independent External Peer Review (IEPR) Team has completed the IEPR of Item _____ of the MRL Levee Enlargement and Seepage Control Project. Notice is hereby given that an IEPR has been conducted in accordance with the requirements of EC 1165-2-214. The review was appropriate to the level of risk and complexity inherent in the project. During the IEPR, 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 result, including whether the product meets the customer's needs consistent with law and existing US Army Corps of Engineers policy. The IEPR made the determination that the Quality Control activities employed appear to be appropriate and effective. All comments resulting from this IEPR have been resolved.

_____ _____
IEPR Team Leader Date

_____ _____
Review Management Organization Date

CERTIFICATION OF INDEPENDENT EXTERNAL PEER REVIEW

Significant concerns and the explanation of the resolution are as follows:

As noted above, all concerns resulting from independent external peer review of the project have been fully resolved.

_____	_____
District MRL PM	Date
_____	_____
District Chief, Engineering/Construction	Date
_____	_____
District Deputy for Project Management	Date