



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

REPLY TO
ATTENTION OF:

27 AUG 2013

CEMVD-PD-SP

MEMORANDUM FOR Commander, Rock Island District

SUBJECT: Saylorville Lake, Big Creek Diversion Dam Control Structure Replacement, Project Review Plan (RP)

1. References:

a. Memorandum, CEMVR-PM-M, 10 July 2013, subject as above (encl 1).

b. Memorandum, CEMVD-RB-T, 15 August 2013, subject: Saylorville Lake, Big Creek Diversion Dam Control Structure Replacement, Project Review Plan (encl 2).

c. EC 1165-2-214, 15 December 2012, subject: Civil Works Review Policy.

2. The enclosed RP for Saylorville Lake, Big Creek Diversion Dam Control Structure Replacement has been prepared in accordance with EC 1165-2-214. The RP has been coordinated with the Upper District Support Team and the Business Technical Division who concurred with the plan in reference 1.a. of the enclosed memorandum subject to the following comment:

3. Concurrence of the review plan is made with the intent that, at the direction of the MVD Chief, Business Technical Division, the MVD Dam and Levee Safety Production Center (DLSPC) will be used to lead the Agency Technical review effort.

CEMVD-PD-SP

SUBJECT: Saylorville Lake, Big Creek Diversion Dam Control
Structure Replacement, Project Review Plan (RP)

4. I hereby approve this RP, which is subject to change as circumstances require, consistent with study development under the Project Management Business Process. Subsequent revisions to this RP or its execution will require new written approval from this office. Non-substantive changes to this RP do not require further approval. The District should post the approved RP to its web site.

5. The MVD point of contact for this action is Mr. Gabe Harris, CEMVD-PD-SP, (601) 634-5926.

A handwritten signature in black ink, appearing to read "Edward E. Belk, Jr.", written in a cursive style.

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

2 Encls



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, ROCK ISLAND DISTRICT
PO BOX 2004 CLOCK TOWER BUILDING
ROCK ISLAND, ILLINOIS 61204-2004

CEMVR-PM-M

JUL 10 2013

MEMORANDUM FOR Commander, US Army Corps of Engineers, Mississippi Valley
Division (CEMVD-PD-SP/Harris), PO Box 80, 1400 Walnut Street, Vicksburg,
Mississippi 39181-0080

SUBJECT: Saylorville Lake, Big Creek Diversion Dam Control Structure Replacement, Project
Review Plan (RP)

1. The subject Review Plan (Encl 1) is submitted for your review and approval. The RP includes Engineering, Design, and Construction (implementation product). An electronic copy of the subject RP with MVD's *Review Plan Checklist for Implementation Documents* has been sent to Mr. William (Gabe) Harris, CEMVD-PD-SP.

2. The point of contact is Mr. Jim Homann, Project Manager, at (309)794-5704, or e-mail: james.d.homann@usace.army.mil.

Encl
as


MARK J. DESCHENES
COL, EN
Commanding

Encl 1



**US Army Corps
of Engineers** ®
Rock Island District

Review Plan

Big Creek Diversion Dam Control Structure Replacement

Saylorville Lake, Iowa

Engineering, Design, and Construction
Phase

MSC Approval Date: Pending

Last Revision Date: None

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1 Purpose and Requirements

1.1 Purpose

This QC Review Plan defines the scope and level of quality management activities for the Big Creek Diversion Dam Sluice Gate Repair at Saylorville Lake, Iowa. The purpose of this Review Plan (RP) is to define the scope and level of review for implementation documents for the Big Creek Diversion Dam Sluice Gate Repair at Saylorville Lake, Iowa. This RP is a standalone document but is also included in an appendix of the subject Project Management Plan (PMP).

1.2 Documents for Review

The project is in the implementation phase. The implementation documents are the 100% plans, specifications, design documentation report, and updates (as required) to the Big Creek Diversion Dam Sluice Gate Repair project, and operations and maintenance manual.

1.3 Review Requirements

This Review Plan (RP) 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. It provides the procedures for ensuring the quality and credibility of US Army Corps of Engineers (USACE) decision, implementation, and operations and maintenance documents and work products. The EC outlines three levels of review: District Quality Control (DQC), Agency Technical Review (ATR), and Independent External peer Review (IEPR). All appropriate levels of review (DQC, ATR, IEPR and Policy and Legal Review) will be included in this RP. The RP identifies the most important skill sets needed in the reviews and the objective of the review and the specific advice sought, thus setting the appropriate scale and scope of review for the individual project.

1.4 References

a.	ER 1105-2-100	<i>Planning Guidance Notebook</i> , 20 Nov 2007
b.	ER 1110-1-12	<i>Engineering and Design - Quality Management</i> , 21 Jul 2006, incorporating Change 1, 30 Sep 2006
c.	ER 1110-2-1150	<i>Engineering and Design for Civil Works</i> , 31 Aug 1999
d.	ER 1110-2-1155	<i>Engineering and Design – Dam Safety Program</i> , 12 Sep 1997
e.	EC 1105-2-408	<i>Peer Review of Decision Documents</i> , 31 May 2005
f.	EC 1105-2-410	<i>Review of Decision Documents</i> , 22 August 2008
g.	EC 1165-2-214	<i>Water Resources Policies and Authorities, Civil Works Review</i> , 15 Dec 2012
h.	03501-MVD	<i>MSC Review of Planning Products</i>
i.	08502-MVD	<i>Review Plans for Technical Products</i> . 06 May 2011
j.	AR 15–1, <i>Committee Management</i> , 27 Nov 1992 (Federal Advisory Committee Act Requirements)	
k.		National Academy of Sciences, <i>Background Information and Confidential Conflict Of Interest Disclosure, BI/COI FORM 3</i> , May 2003

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2 Review Management Organization (RMO) Coordination

2.1 Mississippi Valley Division (MVD)

Mississippi Valley Division will serve as the RMO for this project, and MVD is responsible for:

- Approving the Review Plan
- Assisting in coordination with the National Dam Safety Production Center for ATR

2.2 MVD Dam Safety Production Center

The MVD Dam Safety Production Center will also assist in the review and they are responsible for:

- Selecting the ATR Team for this project
- Overseeing the ATR and ensuring the review is properly conducted
- Coordinating with the National Dam Safety Production Center on development of the ATR team
- Providing ATR members as required

3 Project Information

3.1 Background

The Big Creek Remedial Works feature is located entirely in Polk County, Iowa approximately 9 miles upstream from Des Moines, Iowa. The three main features associated with the Big Creek Remedial Works are a Diversion Dam, Terminal Dam/Diversion Channel, and the Barrier Dam. The diversion dam (75-feet high) was constructed using 920,000 cubic yards of earth fill. A road traverses the 1,650-foot crest. Construction was completed in 1971. A 3'-6" x 3'-6" square outlet conduit is provided for low flow or for draining the lake. The outlet conduit is equipped with a sluice gate closure structure to control outflows into Big Creek through the diversion dam. The material in the diversion dam was obtained from excavation of the diversion channel. It is mostly glacial till, with some loess that occurs between the upper Wisconsin and the lower Kansan tills. Big Creek Lake was established by the Diversion Dam and Diversion Channel. Big Creek Lake has a depth of 60 feet, a surface area of 885 acres, and is 3.5 miles in length. The permanent lake level of elevation 920 is unaffected by Saylorville Reservoir.

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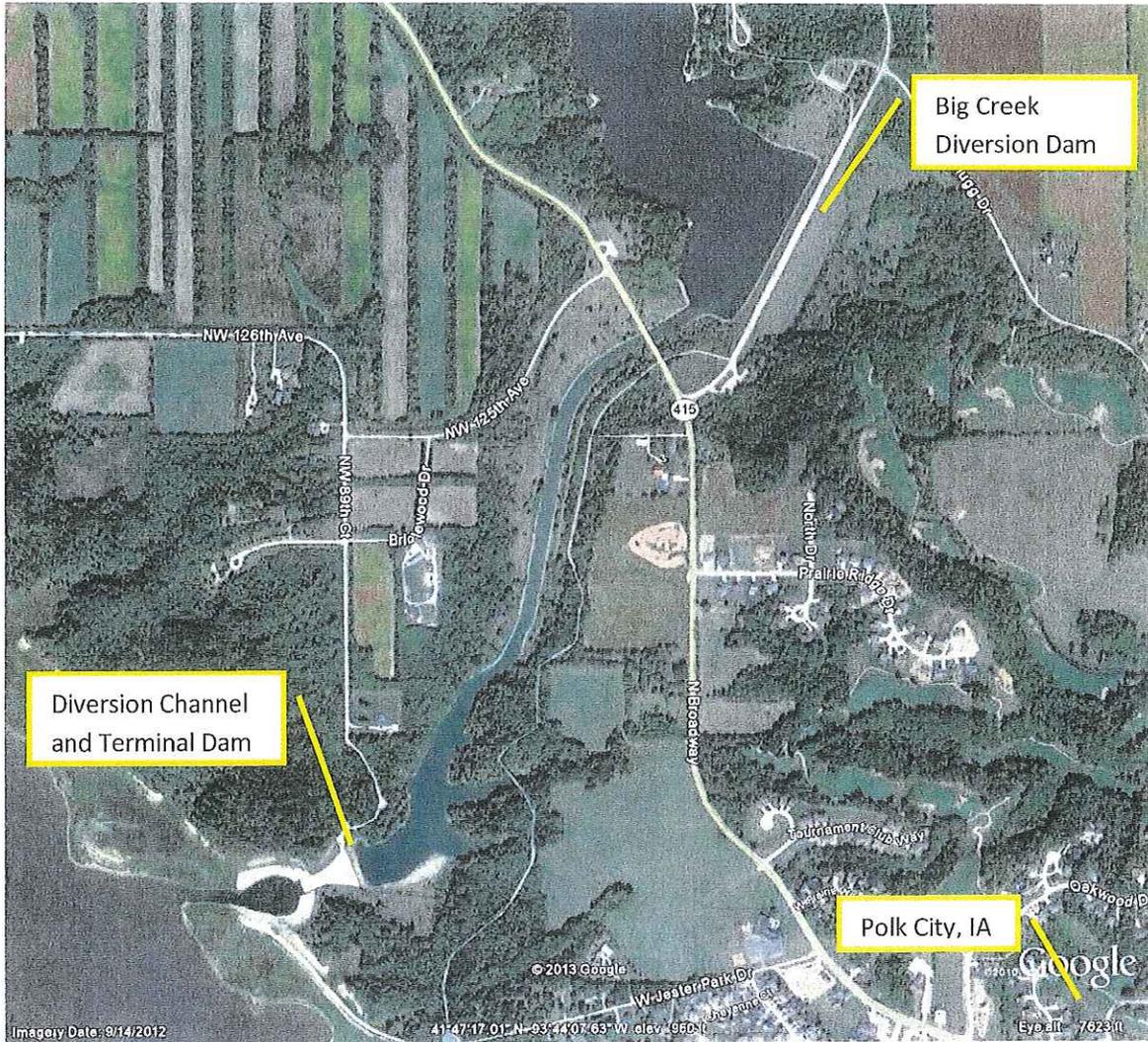


Figure 1: Aerial View of Big Creek Diversion Dam, Channel, and Spillway

3.2 Big Creek Project Description

The construction project includes the demolition of the existing sluice gate closure actuator and the construction of a new vertical control tower with closure structure and actuator. An elevated cat walk from near the crest of the barrier dam to the control tower will also be constructed.

3.3 Project Location

Saylorville Lake is located on the Des Moines River in central Iowa, just north of the city of Des Moines. Big Creek is a tributary to the Des Moines River, located on the river's left descending bank approximately 5.3 river miles upstream from the Saylorville Dam.

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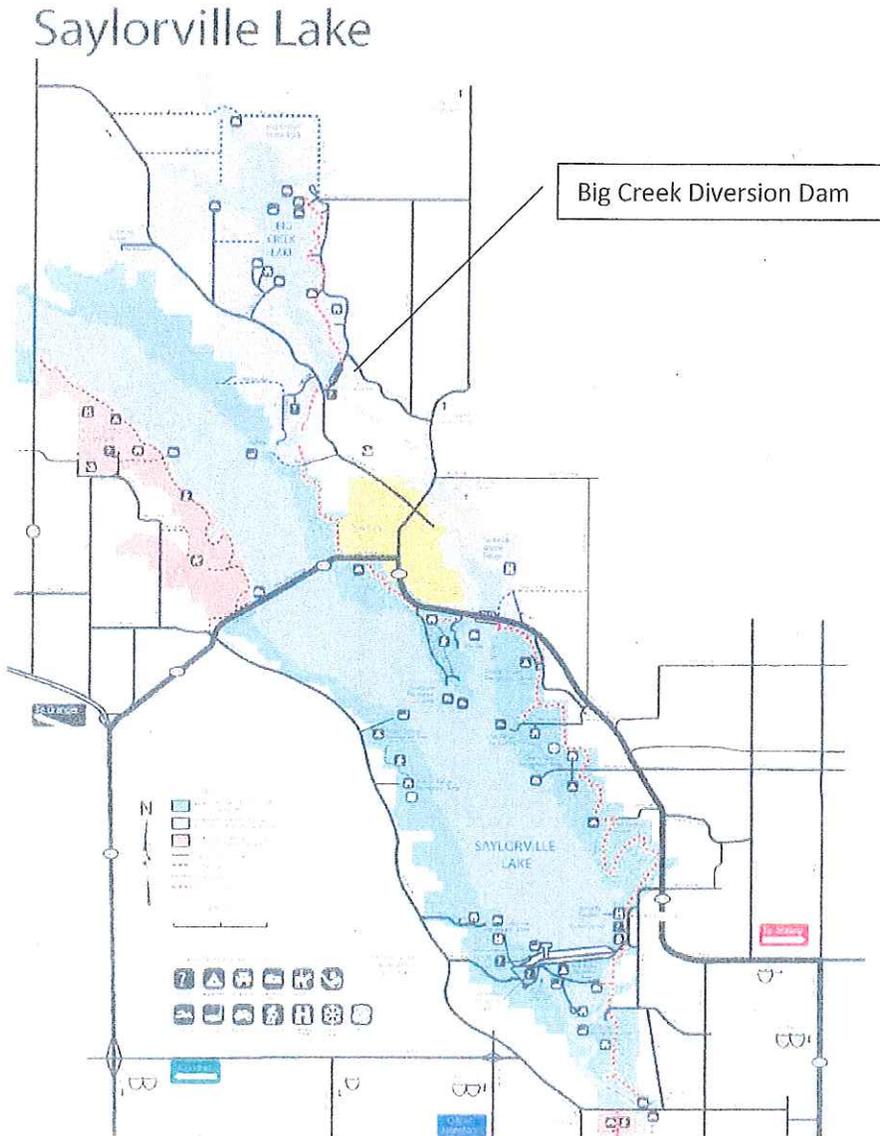


Figure 2: Big Creek Diversion Dam as connected to Saylorville Lake

3.4 Project Authority

The Big Creek Diversion Dam Sluice Gate Replacement Project is authorized as part of Operations and Maintenance of Saylorville Lake Project. The project was constructed according to Saylorville Reservoir Design Memorandum No. 19, Big Creek Valley Remedial Works dated 7 May 1968. The project is 100% by federal funded.

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3.5 Product Information

The results of the Implementation Phase of the Project will be design, specifications, and supporting documentation for the project to go to solicitation. Implementation documents include the plans, specifications, design documentation report (DDR), and any required updates to the dam Operations and Maintenance (O&M) Manual. The purpose of implementation documents is to provide a detailed plan for construction. The plans, specifications, and DDR will be developed by a USACE project delivery team (PDT). A construction contractor will complete the construction.

3.6 Scope

All work products will undergo District Quality Control (DQC) and Agency Technical Review (ATR). It is anticipated that a Type II IEPR will not be required for the final implementation products. Each level of review and how it applies to the project is explained below.

The Mississippi Valley Division Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input (involving district, MSC, RMO, and HQUSACE members) as to the appropriate scope and level of review for the implementation documents. Like the PMP, the Review Plan is a living document and may change as the study progresses. The home 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 Commander's approval memorandum, should be posted on the home district's webpage. The latest Review Plan should also be provided to vertical team members (i.e. the RMO, RMC, and home MSC).

4 District Quality Control (DQC)

DQC is the review of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). It is managed in the home district and may be conducted by staff in the home district as long as they are not doing the work involved in the study. The design products for the Big Creek Diversion Dam Sluice Gate Replacement Project were developed entirely internal to the Corps of Engineers by the project delivery team. Basic quality control tools used on the project include a Quality Management Plan providing for seamless review, peer quality checks and reviews, supervisory reviews, project delivery team (PDT) reviews, a biddability, constructability, operability, environmental, and sustainability (BCOES) review, in-house product development checklists, and established Business Quality Practices (BQPs) used to ensure quality procedures are followed. DQC also includes certification of the plans, specifications, and DDR by a BCOES signoff certification, which includes the chiefs of construction, engineering, and operations divisions and the chiefs of the civil construction and geotechnical functional elements.

DQC efforts include the necessary expertise to address compliance with published Corps policy. When policy and/or legal concerns arise during DQC efforts that are not readily and mutually

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resolved by the PDT and the reviewers, the district seeks issue resolution support from Mississippi Valley Division and Headquarters, U.S. Army Corps of Engineers (HQUSACE) in accordance with the procedures outlined in Appendix H, ER 1105-2-100 or other appropriate guidance.

The Mississippi Valley Division and Rock Island District Quality Management Plans (QMPs) address the conduct and documentation of this fundamental level of review. DQC is required for this project.

4.1 District Quality Control POC's

Rock Island District Quality Control Manager	Mr. Ronald Mott	309-794-5425
Rock Island District Design Branch Chief	Mr. Roger Less	309-794-5664
Rock Island District Engineering and Construction Chief	Mr. Denny Lundberg	309-794-5226

4.2 Peer Reviews (District Quality Control Review)

Prior to ATR, all implementation documents will receive a peer review as stated above. The peer review is conducted by a peer in the same discipline and double checks calculations, assumptions, and other design details used in the design and specifications. A certification will be prepared once issues raised by the reviewers have been addressed to the review team's satisfaction. Indication of this concurrence will be documented by the signing of a quality assurance certification statement by the MVR Chief of Engineering and Construction Division. This certification will state that the PDT team concurs with the project design and that it is ready for advertising. The Technical Project Leader for each review will have the same role as the Lead Engineer as defined in ER-1110-2-1156. Peer review disciplines and individuals are listed in Attachment 1.

BCOES Review

The BCOES review reviews all aspects of the documents used to bid for a construction contract to ensure they will result in a biddable and constructible project. BCOES occurs prior to advertising the contract for bids. The BCOES review disciplines and individuals are listed in Attachment 1.

5 Agency Technical Review (ATR)

ATR is an in-depth review undertaken to ensure the quality and credibility of the government's scientific information, 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. ATR is mandatory for all decision and implementation documents. For other work products, a case specific risk-informed decision is made as to whether ATR is appropriate. The purpose of ATR is to ensure proper application of clearly established criteria, regulations, laws, codes, principles and professional practices. The ATR team reviews the various work products and assures that all the parts fit together in a coherent whole. ATR teams are comprised of senior USACE personnel and may be

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supplemented by outside experts as appropriate. To assure independence, the leader of the ATR team is selected from outside the Mississippi Valley Division.

5.1 ATR POC's

The MVD Dam Safety Production Center shall be responsible for approving the selection of the ATR team and overseeing the execution of the ATR process. The National Dam Safety Production Center shall be consulted with as needed during the project.

Mississippi Valley Division Dam Safety Production Center – Vicksburg District	Mr. Chuck Mendrop	601-631-5208
National Dam Safety Production Center – Huntington District	Mr. Pat Morgan	304-399-5221

5.2 Required ATR Team Expertise

The ATR team shall consist of 6 members including the ATR team leader. The following paragraphs describe the list of required disciplines as well as the experience required by each of the ATR team members. Other disciplines/functions may be added to the ATR team as necessary, in which case the added team member(s) will have the appropriate experience and educational requirements. See Attachment 1 for a list of the assigned ATR team members.

Hydraulics

The reviewer for hydraulics shall be a registered professional engineer with a minimum of a BS degree or higher in engineering science. The reviewer shall have experience in hydrologic analysis and design of hydraulic structures as they relate to dam safety projects. Additionally, reviewer should have experience with the design of emergency bulkhead. Reviewer should have experience in the analysis and design using hydrology models HEC-HMS and hydraulic models HEC-RAS. This member should also be knowledgeable in the coincidence of frequency and the application of USACE risk and uncertainty analyses on dam safety projects. Reviewer shall be experienced with similar projects in an urban setting.

Structural

The reviewer for structural features shall be a registered professional engineer with a BS degree or higher in civil or structural engineering. The reviewer shall have experience in the design, layout, and construction of mid-sized urban dam safety projects and experience. Reviewer should be familiar with the design and operation of dam water control structures and coffer dam design.

Civil

The reviewer for civil features shall be a registered professional engineer with a minimum of a BS degree or higher in civil or construction engineering. The reviewer shall have experience in the

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design, layout, and construction of large civil projects to include knowledge in interior drainage networks, earthwork, and concrete placement.

Geotechnical

The reviewer for geotechnical features shall be a registered professional engineer with a minimum of a BS degree or higher in civil or geotechnical engineering. The reviewer shall have experience in the design, layout, and construction of geotechnical projects, to include knowledge of earthen dam remedial design, hydraulic structures deep foundation design, and groundwater analysis and dewatering systems design.

Mechanical

The reviewer for mechanical features shall be a registered professional engineer with a minimum BS degree or higher in civil or mechanical engineering. Reviewer shall have experience in design, layout, and construction of water control structures and dam safety. The reviewer must be familiar with design and operation of dam control structures and USACE regulations and standards.

Cost

The reviewer for cost estimating shall be a registered or certified cost engineer with a BS degree or higher in engineering and construction management. Reviewer shall have experience in cost estimating. The reviewer shall have extensive knowledge of MII software and the Total Project Cost Summary (TPCS) as required during ATR. A certification from the Cost Directorate of Expertise (Dx) in Walla Walla is required.

5.3 Documentation of ATR

EC 1105-2-408 requires the use of DrChecks (<https://www.projnet.org/projnet/>) to document all ATR comments, responses, and associated resolution accomplished. ATR team members must register with the DrChecks website and they will receive access to DrChecks through the project manager. A PDT member is assigned to take the lead in resolving comments for each of the primary project disciplines. It is the PDT member's responsibility to coordinate resolution of the comment with other team members as required, evaluate the DrChecks comment, enter the PDT's response into DrChecks, and ensure the ATR team member conducts a comment back check. It is the PDT member's responsibility to ensure all DrChecks ATR comments in their discipline are properly addressed, resolved, and closed.

ATR Issues Documentation, Issue Resolution, and Certification of ATR

DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. Comments should be limited to those that are required to ensure adequacy of the product. The four key parts of a quality review comment will normally include:

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- (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 be 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; and
- (4) The probable specific action needed to resolve the concern – identify the action(s) that the reporting officers 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 team coordination (the vertical team includes the District, MSC, RMC, and HQUSACE), and the agreed upon resolution. If an ATR concern cannot be satisfactorily resolved between the ATR team and the PDT, it will be elevated to the vertical team for further resolution in accordance with the policy issue resolution process described in either ER 1110-1-12 or ER 1105-2-100, as appropriate. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

At the conclusion of each ATR effort, the ATR team will prepare a Review Report summarizing the review. Review Reports will be considered an integral part of the ATR documentation and shall:

- Identify the document(s) reviewed and the purpose of the review;
- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions;
- Identify and summarize each unresolved issue (if any); and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

ATR is considered complete and certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. The ATR Lead will prepare a Statement of Technical Review certifying that the issues raised by the ATR team have been resolved

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(or elevated to the vertical team). A Statement of Technical Review should be completed, based on work reviewed to date, for the AFB, draft report, and final report.

ATR Completion

ATR is considered complete and certified when all ATR concerns are either resolved or referred to HQUSACE for resolution and the ATR documentation is complete.

6 Independent External Peer Review (IEPR)

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 USACE is warranted. Any work product that undergoes ATR may also undergo Type I and/or Type II IEPR. In general, decision documents undergo Type I IEPR and implementation documents undergo Type II IEPR (or Safety Assurance Review). Meeting the specific conditions identified for possible exclusions is not, in and of itself, sufficient grounds for recommending exclusion.

6.1 Type I IEPR

This project will not require Type I IEPR because it is in the implementation phase and not the study phase.

6.2 Type II IEPR

A Type II IEPR is conducted to insure public health, safety, and welfare. The circumstances requiring a Type II IEPR are described in Appendix E of EC 1165-2-214. Each of those circumstances is explicitly considered in developing a risk-informed rationale for determining the appropriate level of review, including the need for a safety assurance review.

Basis for Decision on IEPR Recommendation

It is recommended that a Type II IEPR is not required. Denny Lundberg, MVR Chief of Engineering and Construction discussed this project with the MVD chief of the Business Technical Division Bob Fitzgerald. He concurs that an IEPR Type II is not required for this project. Please see Attachment 5 for the risk-informed IEPR decision documentation.

7 Policy Compliance and Legal Review

USACE projects are reviewed throughout the Project process for their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100. These reviews culminate in determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the MVD Commander. DQC and ATR augment and complement the policy review processes by addressing compliance with pertinent published Army

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policies, particularly policies on analytical methods and the presentation of findings in decision documents. The Project plans and specification implementation documents will complete a policy and legal compliance review as part of DQC and ATR.

8 Review Schedule and Costs

The recommended project schedule should show the timing and sequence of all reviews to include a milestone schedule with the critical features of the project design and construction. The review schedule is also contingent on the availability of funds.

8.1 District Quality Control Review Schedule

The district quality control guidelines require a district quality control review (DQCR) and a biddability, constructability, operability, environmental, and sustainability (BCOES) review. The district quality control review costs are paid from project funds. The schedules for completing the major reviews are:

DQC Review	Start: 29 May 12, End: 15 Jun 12
DQCR Value Engineering Addendum	Start: 1 Aug 13, End: 15 Aug 13
BCOES Review	Start: 1 Nov 13, End: 29 Nov 13

8.2 ATR Schedule and Cost

The ATR costs are paid from project funds. Following is the schedule for the ATR review:

ATR Schedule

MVD DSPC approves ATR Team	TBD
Review documents and charge sent to ATR Team	15 Sep 2013
ATR DrChecks comments complete	1 Oct 2013
PDT DrChecks evaluations complete	10 Oct 2013
ATR backchecks complete; DrChecks closed	15 Oct 2013

ATR Cost

Discipline	Estimated Labor Cost
ATR Team Lead	\$10,000
Supporting Disciplines	\$3000 ea. @ 6 ea. = \$18,000
TOTAL	\$28,000

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8.3 Project Deliverable Schedules

Plans and Specifications Complete for Review	15 July 2013
DDR Complete for Review	30 July 2013
O&M Manual Complete	TBD

9 Review Plan Approval and Updates

The MVD Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input (involving district, MSC, RMO, and HQUSACE members) as to the appropriate scope and level of review for the decision document. Like the PMP, the Review Plan is a living document and may change as the study progresses. Rock Island District is responsible for keeping the Review Plan up to date. Minor changes to the review plan since the last MVD Commander approval are documented in Attachment 2. Significant changes to the Review Plan (such as changes to the scope and/or level of review) should be re-approved by the MVD Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commanders' approval memorandum, should be posted on the Home District's webpage. The latest Review Plan should also be provided to the RMO and MVD.

10 Review Plan Points of Contact

Mississippi Valley Division DST	Mr. Gabe Harris	601-634-5926
Rock Island District O&M Program Manager	Mr. Andy Barnes	309-794-5640
Rock Island District Big Creek Project Manager	Mr. Jim Homann	309-794-5704

ATTACHMENT 1 - TEAM ROSTERS

District Quality Control Activities

This is the list of the review teams who will perform the DQC activities. The DQC will be managed by the home district in accordance with MSC and District Quality Management Plans.

Project Delivery Team

NAME	DISTRICT / ORGANIZATION	DISCIPLINE
Jeff Rose	CEMVR-OD-S	Ops Manager/Customer
Andy Barnes	CEMVR-PM-M	Program Manager
Jim Homann	CEMVR-PM-M	Project Manager
Adam Ziegler*	CEMVR-EC-DM	Civil Site
Randy Kinney	CEMVR-EC-G	Geotechnical
Tom Gambucci	CEMVR-EC-HH	Hydraulics
Toby Hunemuller	CEMVR-EC-HH	Hydraulics
Yogendra Patel	CEMVR-EC-DS	Structural
Kirk Atwater	CEMVR-EC-DS	Structural
Ben Ferrell	CEMVR-EC-TE	Cost Estimating
Bryan Radtke	CEMVR-EC-DG	Electrical Engineer
Melissa Brown	CEMVR-EC-DM	CADD
Steve Marruffo	CEMVR-EC-TE	Specifications
* Technical Lead		

BCOE Reviewers

NAME	DISTRICT / SECTION	DISCIPLINE
Mike Cox	CEMVR-OD	Operations Chief
Barb Lester	CEMVR-EC-C	Construction Branch Chief
Ken Barr	CEMVR-PD-E	Environmental Branch Chief
Richard Nickel	CEMVR-EC-D	Asst. Design Branch Chief
Tom Mack	CEMVR-EC-G	Geotechnical Chief

Peer Reviewers (District Quality Control Review)

NAME	DISTRICT / ORGANIZATION	DISCIPLINE
Daniel Arends	CEMVR-EC-G	Geotechnical
Padmakar Srivastava	CEMVR-EC-G	Geotechnical
Eric Johnson	CEMVR-EC-DS	Structural
James Bartek	CEMVR-EC-DG	Electrical
Steve Gustafson	CEMVR-EC-DN	Environmental
Jon Fleischman	CEMVR-EC-DM	Civil
Toby Hunemuller	CEMVR-EC-H	Hydraulics
John Grief	CEMVR-OD-S	Operations/Customer
Jody Schmitz	CEMVR-EC-TE	Specifications
Aaron Heidenreich	CEMVR-EC-C	Construction
Richard Busch	CEMVR-EC-CCW	Construction

Drawing Approval for In-House Design

NAME	DISTRICT / SECTION	DISCIPLINE
Denny Lundberg	CEMVR-EC	Engineering- Construction Division Chief
Kevin Landwehr	CEMVR-EC-H	Hydraulic Branch Chief
Roger Less	CEMVR-EC-D	Design Branch Chief
Tom Mack	CEMVR-EC-G	Geotechnical Branch Chief

Agency Technical Review

NAME	DISTRICT / ORGANIZATION	DISCIPLINE
*TBD – Team Lead	CENWO (NWD DSPC)	TBD
TBD	TBD	Civil
TBD	TBD	Hydraulics
TBD	TBD	Structural
TBD	TBD	Geotechnical
TBD	TBD	Mechanical
TBD	TBD	Cost

*Denotes ATR Team Lead

ATTACHMENT 2 – REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page/Paragraph Number

ATTACHMENT 3 - REVIEW PLAN CHECKLIST For Implementation Documents

Date: 5/3/2013

Originating District: Rock Island District

Project/Study Title: Big Creek Diversion Dam Sluice Gate Replacement

District POC: Jim Homann, Project Manager, 309-794-5704

Please fill out this checklist and submit with the draft Review Plan when coordinating with the appropriate RMO. For DQC, the District is the RMO; for ATR of Dam and Levee Safety Studies, the Risk Management Center is the RMO; and for non-Dam and Levee Safety projects and other work products, MSC is the RMO; for Type II IEPR, the Risk Management Center is the RMO. Any evaluation boxes checked 'No' indicate the RP possibly may not comply with EC 1165-2-214 and should be explained. Additional coordination and issue resolution may be required prior to MSC approval of the Review Plan.

REQUIREMENT	REFERENCE	EVALUATION
1. Is the Review Plan (RP) a stand alone document?	EC 1165-2-214, Appendix B Para 4a	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
a. Does it include a cover page identifying it as a RP and listing the project/study title, originating district or office, and date of the plan?		a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
b. Does it include a table of contents?		b. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
c. Is the purpose of the RP clearly stated and EC 1165-2-214 referenced?	EC 1165-2-214 Para 7a	c. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
d. Does it reference the Project Management Plan (PMP) of which the RP is a component including P2 Project #?	EC 1165-2-214 Para 7a (2)	d. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
e. Does it include a paragraph stating the title, subject, and purpose of the work product to be reviewed?	EC 1165-2-214 Appendix B Para 4a	e. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
f. Does it list the names and disciplines in the home district, MSC and RMO to whom inquiries about the plan may be directed?*	EC 1165-2-214, Appendix B, Para 4a	f. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
*Note: It is highly recommended to put all team member names and contact information in an appendix for easy updating as team members		

<p>2. Documentation of risk-informed decisions on which levels of review are appropriate.</p>	<p>EC 1165-2-214, App B, Para 4b</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
<p>a. Does it succinctly describe the three levels of peer review: District Quality Control (DQC), Agency Technical Review (ATR), and Independent External Peer Review (IEPR)?</p> <p>b. Does it contain a summary of the CW implementation products required?</p> <p>c. DQC is always required. The RP will need to address the following questions:</p> <p>i. Does it state that DQC will be managed by the home district in accordance with the Major Subordinate Command (MSC) and district Quality Management Plans?</p> <p>ii. Does it list the DQC activities (for example, 30, 60, 90, BCOE reviews, etc)</p> <p>iii. Does it list the review teams who will perform the DQC activities?</p> <p>iv. Does it provide tasks and related resource, funding and schedule showing when the DQC activities will be performed?</p> <p>d. Does it assume an ATR is required and if an ATR is not required does it provide a risk based decision of why it is not required? If an ATR is required the RP will need to address the following questions:</p> <p>i. Does it identify the ATR District, MSC, and RMO points of contact?</p> <p>ii. Does it identify the ATR lead from outside the home MSC?</p> <p>iii. Does it provide a succinct description of the primary disciplines or expertise needed for the review (not simply a list of disciplines)? If the reviewers are listed by name, does the RP describe the qualifications and years of relevant experience of the ATR team members?*</p>	<p>EC 1165-2-214 7a</p> <p>EC1165-2-214 Para 15</p> <p>EC1165-2-214 Para 15a</p> <p>EC1165-2-214 Para 8a</p> <p>EC 1165-2-214 Appendix B (1)</p> <p>EC 1165-2-214 App B, Para 4g</p> <p>EC 1165-2-214 Appendix B Para 4c</p> <p>EC1165-2-214 Para 15a</p> <p>EC 1165-2-214 Para 7a</p> <p>EC 1165-2-214 Para 9c</p> <p>EC 1165-2-214 Appendix B Para 4g</p>	<p>a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>b. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>i. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>ii. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>iii. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>iv. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>d. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>i. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>ii. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>iii. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>

<p>iv. Does it provide tasks and related resource, funding and schedule showing when the ATR activities will be performed?</p> <p>v. Does the RP address the requirement to document ATR comments using Dr Checks?</p>	<p>EC 1165-2-214 Appendix C Para 3e</p> <p>EC 1165-2-214 Para 7d (1)</p>	<p>iv. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>v. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
<p><i>*Note: It is highly recommended to put all team member names and contact information in an appendix for easy updating as team members change or the RP is updated.</i></p>		
<p>e. Does it assume a Type II IEPR is required and if a Type II IEPR is not required does it provide a risk based decision of why it is not required including RMC/ MSC concurrence? If a Type II IEPR is required the RP will need to address the following questions:</p>	<p>EC1165-2-214 Para 15a</p>	<p>e. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>(Type II IEPR not required for this project)</p>
<p>i. Does it provide a defensible rationale for the decision on Type II IEPR?</p>	<p>EC 1165-2-214 Para 7a</p>	<p>i. Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
<p>ii. Does it identify the Type II IEPR District, MSC, and RMO points of contact?</p>	<p>EC 1165-2-214 Appendix B Para 4a</p>	<p>ii. Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
<p>iii. Does it state that for a Type II IEPR, it will be contracted with an A/E contractor or arranged with another government agency to manage external to the Corps of Engineers?</p>	<p>EC 1165-2-214 Appendix B Para 4k (4)</p>	<p>iii. Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
<p>iv. Does it state for a Type II IEPR, that the selection of IEPR review panel members will be made up of independent, recognized experts from outside of the USACE in the appropriate disciplines, representing a balance of expertise suitable for the review being conducted?</p>	<p>EC 1165-2-214 Appendix B, Para 4k(1) & Appendix E, Para's 1a & 7</p>	<p>iv. Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
<p>v. Does it state for a Type II IEPR, that the selection of IEPR review panel members will be selected using the National Academy of Science (NAS) Policy which sets the standard for "independence" in the review process?</p>	<p>EC 1165-2-214 Para 6b (4) and Para 10b</p>	<p>v. Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>

<p>vi. If the Type II IEPR panel is established by USACE, has local (i.e. District) counsel reviewed the Type II IEPR execution for FACA requirements?</p> <p>vii. Does it provide tasks and related resource, funding and schedule showing when the Type II IEPR activities will be performed?</p> <p>viii. Does the project address hurricane and storm risk management or flood risk management or any other aspects where Federal action is justified by life safety or significant threat to human life?</p> <p><i>Is it likely? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></i> <i>If yes, Type II IEPR must be addressed.</i></p> <p>ix. Does the RP address Type II IEPR factors?</p>	<p>EC1165-2-214 Appendix E, Para 7c(1)</p> <p>EC1165-2-214 Appendix E, Para 5a</p> <p>EC1165-2-214 Appendix E Para 2</p>	<p>vi. Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>vii. Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>viii. Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>ix. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
<p>Factors to be considered include:</p> <ul style="list-style-type: none"> • Does the project involve the use of innovative materials or techniques where the engineering is based on novel methods, presents complex challenges for interpretations, contains precedent setting methods or models, or presents conclusions that are likely to change prevailing practices? • Does the project design require redundancy, resiliency and robustness • Does the project have unique construction sequencing or a reduced or overlapping design construction schedule; for example, significant project features accomplished using the Design-Build or Early Contractor Involvement (ECI) delivery systems. <p><i>Is it likely? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></i> <i>If yes, Type II IEPR must be addressed.</i></p>		
<p>g. Does it address policy compliance and legal review? If no, does it provide a risk based decision of why it is not required?</p>	<p>EC 1165-2-214 Para 14</p>	<p>g. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>

3. Does the RP present the tasks, timing, and sequence of the reviews (including deferrals)?	EC 1165-2-214, Appendix B, Para 4c	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
a. Does it provide an overall review schedule that shows timing and sequence of all reviews? b. Does the review plan establish a milestone schedule aligned with the critical features of the project design and construction?	EC 1165-2-214, Appendix C, Para 3g EC 1165-2-214, Appendix E, Para 6c	a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> b. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
4. Does the RP address engineering model certification requirements?	EC 1165-2-214, Appendix B, Para 4i	N/A
a. Does it list the models and data anticipated to be used in developing recommendations? b. Does it indicate the certification /approval status of those models and if certification or approval of any model(s) will be needed? c. If needed, does the RP propose the appropriate level of certification??? /approval for the model(s) and how it will be accomplished?		a. N/A b. N/A c. N/A
5. Does the RP explain how and when there will be opportunities for the public to comment on the study or project to be reviewed?	EC 1165-2-214, Appendix B, Para 4d	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
a. Does it discuss posting the RP on the District website? b. Does it indicate the web address, and schedule and duration of the posting?		a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> b. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
6. Does the RP explain when significant and relevant public comments will be provided to the reviewers before they conduct their review?	EC 1165-2-214, Appendix B, Para 4e	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
a. Does it discuss the schedule of receiving public comments? b. Does it discuss the schedule of when significant comments will be provided to the reviewers?		a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> b. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

<p>7. Does the RP address whether the public, including scientific or professional societies, will be asked to nominate professional reviewers?*</p>	<p>EC 1165-2-214, Appendix B, Para 4h</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
<p>a. If the public is asked to nominate professional reviewers then does the RP provide a description of the requirements and answer who, what, when, where, and how questions? <i>* Typically the public will not be asked to nominate potential reviewers</i></p>		<p>a. N/A</p>
<p>8. Does the RP address expected in-kind contributions to be provided by the sponsor?</p>	<p>EC 1165-2-214, App B, Para 4j</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
<p>a. If expected in-kind contributions are to be provided by the sponsor, does the RP list the expected in-kind contributions to be provided by the sponsor?</p>		<p>a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
<p>9. Does the RP explain how the reviews will be documented?</p> <p>a. Does the RP address the requirement to document ATR comments using Dr Checks and Type II IEPR published comments and responses pertaining to the design and construction activities summarized in a report reviewed and approved by the MSC and posted on the home district website?</p> <p>b. Does the RP explain how the Type II IEPR will be documented in a Review Report?</p> <p>c. Does the RP document how written responses to the Type II IEPR Review Report will be prepared?</p> <p>d. Does the RP detail how the district/PCX/MSC and CECW-CP will disseminate the final Type II IEPR Review Report, USACE response, and all other materials related to the Type II IEPR on the internet?</p>	<p>EC 1165-2-214, Para 7d</p> <p>EC 1165-2-214 Appendix B Para 4k (14)</p> <p>EC 1165-2-214 Appendix B Para 4k (14)</p> <p>EC 1165-2-214 Appendix B Para 5</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>b. N/A</p> <p>c. N/A</p> <p>d. N/A</p>
<p>10. Has the approval memorandum been prepared and does it accompany the RP?</p>	<p>EC 1165-2-214, App B, Para 7</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>

ATTACHMENT 4 – IEPR DECISION DOCUMENTATION

MEMORANDUM FOR RECORD

SUBJECT: Big Creek Diversion Dam Sluice Gate Replacement, IEPR Type II Safety Assurance Review (SAR) Determination

1. Purpose: This memorandum documents the decision process and final determination of whether an Independent External Peer Review Type II SAR is required for the subject project in accordance with USCAE Civil Works Policy EC 1165-2-214, dated 15 Dec 2012. Paragraph 1 a. of Appendix E of EC 1165-2-214 requires IEPR Type II be conducted for hurricane and storm risk management and flood risks management projects, as well as other projects where potential project hazards pose a significant threat to human life.

2. Background Big Creek is a tributary to the Des Moines River, entering on the left bank about 5.3 river miles upstream from Saylorville Dam. The Big Creek Remedial Works features are located entirely in Polk County, Iowa, approximately 9 miles upstream from Des Moines, Iowa. The general plan for protection of the various facilities in Big Creek Valley consists of a dam (barrier dam) near the mouth of Big Creek to exclude reservoir waters backing up into the Polk City area, a second dam (diversion dam) across Big Creek upstream from the various facilities, and a diversion channel from Big Creek through the ridge separating the Big Creek valley from the Saylorville Reservoir. Big Creek has a total drainage area of about 96 square miles with the drainage area upstream from the diversion dam of 80 square miles. A gravity outlet and pumping plant at the barrier dam is required to remove interior drainage from the area between the two dams. At the diversion dam, a slide gated concrete conduit through the dam facilitates downstream Big Creek low-flow requirements and potential draining of the upstream lake. All high flows into the diversion dam's lake are routed through the diversion channel. The diversion channel has a concrete spillway at its terminus, known as the terminal dam, with crest at elevation 920 (NGVD29), which resulted in a relatively stable pool elevation of 920. This forms an 885-acre Big Creek Lake upstream of the diversion dam that is unaffected by Saylorville Reservoir stages.

During an inspection in the 1990's the diversion dam's outlet slide gate was exercised at which time the gate malfunctioned. Measures were taken at the time to close the gate, but efforts lead to increased flow through the dam conduit while the gate was in a closed position. It is presumed that in the event the gate is re-opened, that it will not be able to be re-closed. The construction of a new control structure will allow for normal operations of the dam, allow for routine dam safety inspections of the concrete conduit and reduce future operation and maintenance costs from excess flow through the conduit into the downstream barrier dam ponding area.

3. Risk Assessment. A risk assessment of Diversion Dam was conducted in 2009 as part of SPRA screening process of USACE's dam safety program. This risk screening identified six deficiencies, four of which are related to the concrete gravity conduit outlet works slide gate:

- a) A concrete gravity conduit runs through the embankment and is gated on the upstream end only. The gate currently does not function as intended since the mechanical means to move it is broken. There is a known crack with leakage through the structure housing the gate inset. The gate remains partially open always providing a small amount of flow downstream. The leakage through the surrounding concrete outlet has not been fixed.
- b) The true condition of the slide gate cannot be determined since there is no means to dewater and inspect.
- c) The conduit cannot be inspected and its condition is unknown.
- d) The stilling well is thought to be in good condition, but it too cannot be dewatered and inspected.

Additionally, the SPRA risk screening identified four potential failure modes, two of which relate to the four deficiencies noted on the outlet works slide gate:

- a) Seepage and piping through or along the conduit
- b) Failure of outlet conduit sluice gate

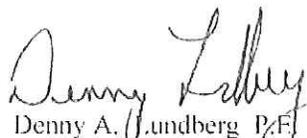
Each of these deficiencies and potential failure modes is directly tied to the malfunctioning slide gate, and the proposed replacement of the gate works will address each of these deficiencies and significantly reduce the potential failure modes related to these deficiencies. Additionally, the construction of the new outlet works will not impact on the remaining excellent integrity of the diversion dam features including the embankment, the concrete conduit through the embankment and the embankment's internal drain system.

Thus, the IEPR Type II SAR concerns are related to the construction phase of the project. As the outlet conduit only provides for downstream low-flow requirements on Big Creek with high flows exiting the lake through the diversion channel and flowing directly into Saylorville Lake; dam safety discharge concerns related to high water during construction do not exist due to the proposed construction. Noted is that downstream 3 cfs low-flow requirements during construction will be accommodated with either separate dedicated pumping over the dam or discharging the site dewatering pumps into the conduit. Additionally, an uncontrolled flow through the 3.5' x 3.5' outlet conduit during construction (cofferdam compromised) will not create a hazardous downstream flow on Big Creek through Polk City.

It continues to be noted that the Big Creek diversion dam is classified as a high hazard dam with significant downstream population at risk were a catastrophic failure occur on the existing dam. The proposed new outlet works will not change this high hazard dam classification, but it will reduce the current DSAC II classification that is primarily driven by the malfunctioning existing

outlet gate. However, the new outlet works and construction thereof does not represent or create any new or additional failure modes that represent or create a significant risk to human life. The design of the new outlet works will undergo comprehensive DQC and ATR technical design reviews in accordance with EC 1165-2-214.

4. Conclusion. As described above, the existing Big Creek diversion dam does represent a significant threat to human life and there exists current deficiencies with the diversion dam that could lead to potential failure modes that could result in a failure of the dam. The proposed new outlet works will address many of these deficiencies and the new outlet works provides for an improved design that is much more redundant, resilient and robust than the existing slide gate. The new outlet works and construction thereof does not create any new potential failure modes; and thus the project at-hand does not pose a significant threat to human life. Additional considerations for not conducting an IEPR Type II SAR are that no innovative materials, techniques or novel engineering methods or precedent setting models and methods are included in the project. A proven construction contract acquisition method of a best value contract award will be used to ensure a high degree of construction quality; and construction sequencing will have no unique characteristics. These factors support the determination that an IEPR Type II SAR is not required for this project. This assessment of risk and characteristics of the proposed project has been discussed with Bob Fitzgerald, Chief Business Technical Division of MVD and he concurs in this determination.



Denny A. Lundberg P.E.
Chief, Engineering and Construction
Rock Island District
US Army Corps of Engineers

MEMORANDUM FOR RECORD

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During an inspection in the 1990's the diversion dam's outlet slide gate was exercised at which time the gate malfunctioned. Measures were taken at the time to close the gate, but efforts lead to increased flow through the dam conduit while the gate was in a closed position. It is presumed that in the event the gate is re-opened, that it will not be able to be re-closed. The construction of a new control structure will allow for normal operations of the dam, allow for routine dam safety inspections of the concrete conduit and reduce future operation and maintenance costs from excess flow through the conduit into the downstream barrier dam ponding area.

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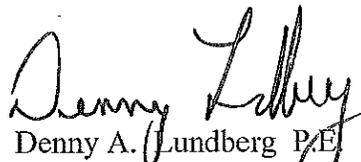
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It continues to be noted that the Big Creek diversion dam is classified as a high hazard dam with significant downstream population at risk were a catastrophic failure occur on the existing dam. The proposed new outlet works will not change this high hazard dam classification, but it will reduce the current DSAC II classification that is primarily driven by the malfunctioning existing outlet gate. However, the new outlet works and construction thereof does not represent or create

outlet gate. However, the new outlet works and construction thereof does not represent or create any new or additional failure modes that represent or create a significant risk to human life. The design of the new outlet works will undergo comprehensive DQC and ATR technical design reviews in accordance with EC 1165-2-214.

4. Conclusion. As described above, the existing Big Creek diversion dam does represent a significant threat to human life and there exists current deficiencies with the diversion dam that could lead to potential failure modes that could result in a failure of the dam. The proposed new outlet works will address many of these deficiencies and the new outlet works provides for an improved design that is much more redundant, resilient and robust than the existing slide gate. The new outlet works and construction thereof does not create any new potential failure modes; and thus the project at-hand does not pose a significant threat to human life. Additional considerations for not conducting an IEPR Type II SAR are that no innovative materials, techniques or novel engineering methods or precedent setting models and methods are included in the project. A proven construction contract acquisition method of a best value contract award will be used to ensure a high degree of construction quality; and construction sequencing will have no unique characteristics. These factors support the determination that an IEPR Type II SAR is not required for this project. This assessment of risk and characteristics of the proposed project has been discussed with Bob Fitzgerald, Chief Business Technical Division of MVD and he concurs in this determination.



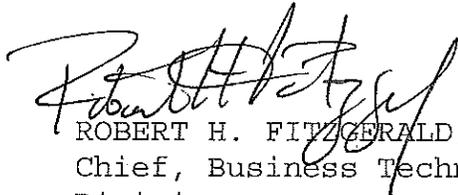
Denny A. Lundberg P.E.
Chief, Engineering and Construction
Rock Island District
US Army Corps of Engineers

15 August 2013

MEMORANDUM FOR CEMVD-PD-SP (Mark Moore)

SUBJECT: Saylorville Lake, Big Creek Diversion Dam Control
Structure Replacement, Project Review Plan

1. Reference memorandum, CEMVR-PM-M, 10 July 2013, subject as above.
2. Concurrence of the review plan is made with the intent that, at the direction of the MVD Chief RB-T, the MVD Dam and Levee Safety Production Center (DLSPC) will be used to lead the Agency Technical Review effort.
3. The RB-T point of contact is Mr. Will Bradley, 601-634-5644.



ROBERT H. FITZGERALD, P.E.
Chief, Business Technical
Division