U.S. Army Corps of Engineers Mississippi Valley Division Vicksburg District

Review Plan for a Request, Pursuant to 33 USC § 408, to Alter the Arkabutla, Enid, Grenada, and Sardis Lakes Projects by Adding Hydropower Generating Facilities

> APPROVED BY:

> > IICHAEL C. WEHR

Major General, U.S. Army Division Commander

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U.S. Army C	orps of	Engineers
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Vicksburg District

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1. Introduction

a. Purpose of This Review Plan

This Alteration-Specific Review Plan (RP) is intended to ensure quality of the review by the Vicksburg District (District) for the Rye Development request to alter four US Army Corps of Engineers (USACE) civil works projects within the Vicksburg District's area of responsibility. This review plan was prepared in accordance with Engineer Circular (EC) 1165-2-216, "Policy and Procedural Guidance for Processing Requests to Alter US Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408" (reference paragraph 7.c.(4) in EC 1165-2-216) and Engineer Circular (EC) 1165-2-214, "Civil Works Review Policy", 15 December 2012. This RP provides the review guidelines associated with a specific alteration request pursuant to 33 USC § 408 (Section 408).

b. Guidance and Policy References

- EC 1165-2-214, Civil Works Review Policy, 15 December 2012
- EC 1165-2-216, Policy and Procedural Guidance for Processing Requests to Alter US Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408, 31 July 2014
- ER 1110-1-12, Quality Management, 31 Mar 2011
- ER 1110-2-1156, Safety of Dams Policy and Procedure, 31 Mar 2014
- ER 1110-1-1807, Drilling in Earth Embankment Dams and Levees, 31 December 2014
- ER 1110-2-109, Hydroelectric Design Center, 1 November 2011
- ER 1110-2-1454, Corps Responsibilities for Non-Federal Hydroelectric Power Development under the Federal Power Act, 15 July 1983
- Memorandum of Understanding between the Corps and the FERC on Non-Federal Hydropower Projects, 30 March 2011
- EC 1165-2-209, Civil Works Review Policy, 31 Dec 2009
- ER 1105-2-100, Planning Guidance Notebook, 22 April 2000
- CECW-PB Memorandum, Policy and Procedural Guidance for the Approval of Modifications and Alterations of Corps of Engineers Projects [33 USC 408], 23 Oct 2006
- CECW-PB Memorandum for See Distribution, Clarification Guidance on the Policy and Procedural Guidance for the Approval of Modifications and Alterations of Corps of Engineers Projects, 17 Nov 2008
- EC 1105-2-407, Planning Models Improvement Program: Model Certification, 31 May 2005
- ER 1110-2-12, Quality Management, 30 Sep 2006
- ER 405-1-12, Real Estate Handbook, 20 Nov 1985

The products applicable to determining the potential impacts to the operation and maintenance of the federal projects will be reviewed against published guidance, including Engineering Regulations, Engineering Circulars, Engineering Manuals, Engineering Technical Letters, Engineering Construction Bulletins, Policy Guidance Letters, implementation guidance, project guidance memoranda and other formal guidance memoranda issued by HQUSACE.

Per EC 1165-2-216, "A proposed alteration pursuant to Section 408 must meet current USACE design and construction standards." For dam modifications, ER 1110-2-1156 describes a risk-informed process for the modification of dams. This ER must be followed when specifying the reviews required of the design and when assessing the risks of the proposed alteration. As project risks are identified, additional reviews may be required. This could include a Semi-Quantitative Risk Assessment (SQRA). This review plan will be revised as necessary. Minor revisions will be documented using attachment 5. If major revisions, such as a change in scope or change in review levels are necessary, the review plan will be submitted for reapproval.

c. Description and Information

This RP defines the scope and level of the District's Agency Technical Review (ATR) and the USACE Section 408 process review for the proposed alterations to provide for the addition of hydroelectric power generation to the Arkabutla, Enid, Grenada and Sardis Lakes Projects.

A single review plan will be utilized because the four individual alterations are very similar in configuration. The Federal Energy Regulatory Commission (FERC) has allowed the developer to make single submittals for all of the alterations due to their similar design and configuration. The current schedule provided to USACE has all increments of design documents (30, 60, 90, 100 %) being submitted at the same time for each alteration. Similar engineering disciplines will be involved in the review due to the similar nature of each facility. Because the alterations are similar in nature, they may all be submitted together in the same Section 408 request package and may use the same review team. Although they are similar and being submitted at the same time, the quality and thoroughness of reviews will not suffer. USACE will try to use lessons learned in the review of each alteration to aid in a more efficient and timely review of the others. Should an alteration be delayed in schedule, either this review plan will be modified accordingly or a separate review plan will be developed for that alteration.

Funding for all of the reviews comes from HQUSACE.

Timing of the construction phases will be staggered in order to allow all four alterations to utilize similar schedules offset by several months for economy, efficiency, and practicality. Current plans call for two, at most, facilities to be constructed at one time, though funding for construction has not been acquired at this time. USACE Quality Assurance personnel will be situated at each construction site for the duration of the construction period.

FFP Missouri 2, LLC is the Section 408 Permission Requester (Requester) and has obtained licenses from FERC for the individual projects. Rye Development, LLC (Rye) is the agent for the Requester and manager of the Requester's new hydropower developments. The proposed alterations consist of the Arkabutla Lake Hydroelectric Project (FERC Project No. 13704-002), Sardis Lake Hydroelectric Project (FERC Project No. 13701-002), Enid Lake Hydroelectric Project (FERC Project No. 13703-002), and the Grenada Lake Hydroelectric Project (FERC Project No. 13702-002). The proposed alterations will be constructed at the Corps' existing Arkabutla, Sardis, Enid, and Grenada Dams located within the Yazoo River Basin in Mississippi.

The Independent External Peer Review (IEPR) Type II Safety Assurance Review (SAR) Plan that was prepared and executed by the Requester is discussed in the RP and contained in Attachment 4. The SAR team will be visiting each structure to perform their engineering review.

The RP identifies the most important skill sets needed in the reviews, the objective of the reviews, and the specific advice sought, thus setting the appropriate scale and scope of review for the alterations.

In general, the four alterations have a similar basic configuration consisting of a new powerhouse located in the tailrace of Corps flood control projects. The existing outlet works structures will be used as the new powerhouse intake, with a new penstock tied to the existing outlet works conduit. A new bifurcation chamber and gate structure will be constructed at the downstream end of the existing outlet conduit to control flows between the new powerhouse and the existing tailrace. Specifics of the design (construction, type of cofferdam, expected maximum slopes, duration, etc.) will be inserted into the RP as these factors become known.

A detailed description of the proposed facilities is presented in the FERC license for each project. The proposed powerhouse capacity and operating flows for each project are as follows:

Arkabutla Lake Hydroelectric Project – two vertical Kaplan turbine-generator units with a combined capacity of 5.1 megawatts (MW). The project will operate in run-of-release mode from a minimum reservoir release flow of 50 cubic feet per second (cfs) to a maximum powerhouse flow of 1,400 cfs.

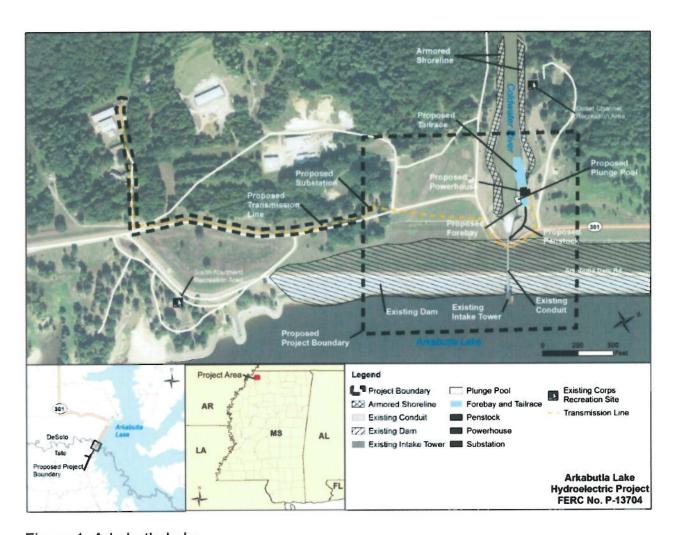


Figure 1. Arkabutla Lake

Sardis Lake Hydroelectric Project – two vertical Kaplan turbine generator units with a combined installed capacity of 14.6 MW. The project will operate in a run-of-release mode from a minimum reservoir release flow of 300 cfs to a maximum powerhouse flow of 3,100 cfs.

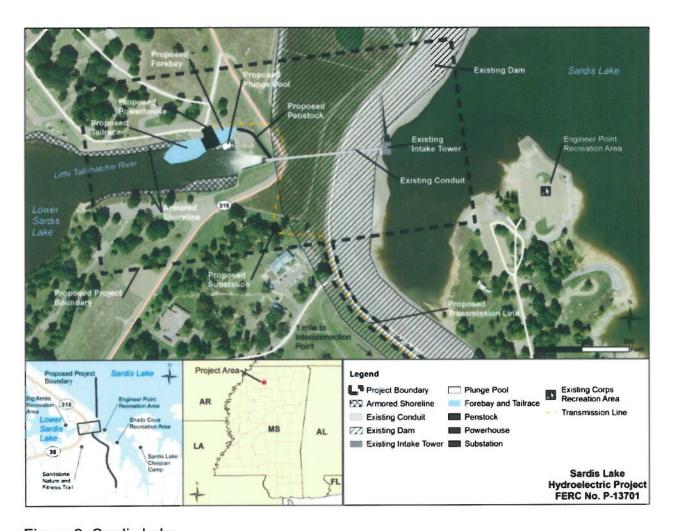


Figure 2. Sardis Lake

Enid Lake Hydroelectric Project – two vertical Kaplan turbine generator units with a combined capacity of 4.6 MW. The project will operate in a run-of-release mode from a minimum reservoir release flow of 50 cfs to a maximum powerhouse flow of 1,100 cfs.

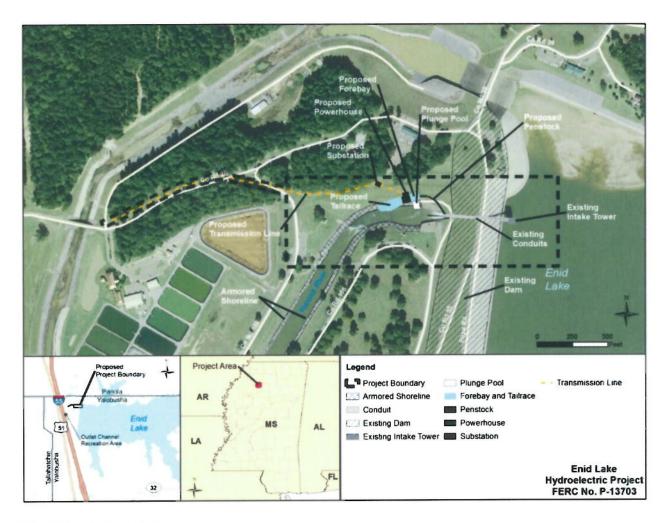


Figure 3. Enid Lake

Grenada Lake Hydroelectric Project – two vertical Kaplan turbine generator units with a combined capacity of 9 MW. The project will operate in a run-of-release mode from a minimum reservoir release flow of 100 cfs to a maximum powerhouse flow of 2,250 cfs.

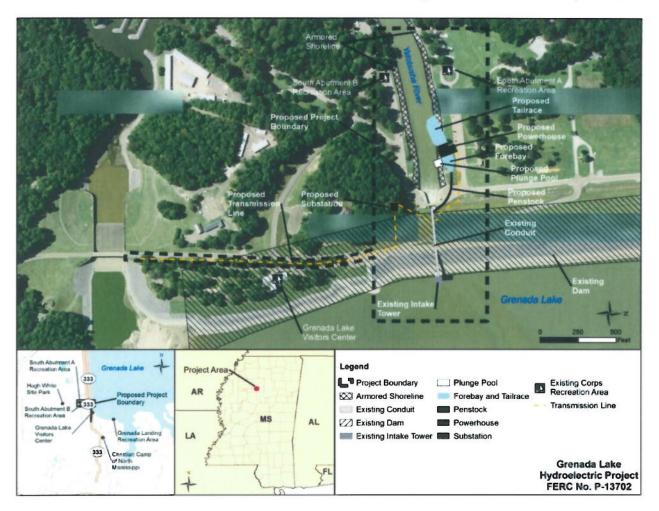


Figure 4. Grenada Lake

The Requester plans to design and construct the alterations in a programmed fashion, ensuring effective utilization of project resources, flow management, and construction sequencing between each individual alteration. The similar configurations will be used to streamline the facility layout and design to optimize construction efficiency.

d. Review Management Organization (RMO) Coordination

The RMO for the peer review effort described in this RP is the USACE Risk Management Center (RMC). As the RMO, the RMC will determine if the proposed alteration is to be presented to the Dam Senior Oversight Group (DSOG) and will endorse the requestor's and district's review plans. The proposed alteration to add hydropower generation facilities to the four flood control lakes is not expected to increase the risk at the facilities.

However, determination of whether or not a DSOG review is required is based on whether the benefits of the alteration are generally commensurate with the risks, whether the alteration potentially worsens or creates new failure modes or risk drivers for the USACE project, and whether the alteration is exceptionally complex or high risk. Because this alteration is significant in nature and complex in nature, RMC has determined that this request will require DSOG review.

2. Execution Plan and Review Requirements

a. Review Required by the District

The review of this alteration request shall include a District-led ATR, reference paragraph 7 c. (4) in EC 1165-2-216. Per EC 1165-2-214 the District's Chief of Engineering has determined that a SAR will be required (Attachment 6).

Drilling Program Plans must be reviewed and approved by the District Dam Safety Officer (DSO). If any drilling fluid or other stabilizing or circulating media is proposed, a technical review performed by the Geotechnical and Materials Community of Practice (G&M CoP) Standing Committee on Drilling and Instrumentation is required. The plan will then require approval from the District DSO, pending satisfactory resolution of the technical review comments (see ER 1110-1-1807). Any proposed drilling into dam sections will require separate Section 408 permission and drilling plan.

b. Review Required by the Requester

- (1) Quality Assurance and Quality Control (QA/QC) Review. QA/QC is the review of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Quality Control Plan (QCP) of the Requester (see Attachment 4). QC will consist of Quality Checks and reviews as outlined in the QCP. QA/QC reviews will be accomplished by the Requester.
- (2) <u>Safety Assurance Review (SAR)</u> A SAR, also known as a Type II IEPR, shall be conducted on design and construction activities for flood risk management projects, as well as other projects, where potential hazards pose a significant threat to human life. External panels will review the design and construction activities prior to initiation of physical construction and periodically thereafter until construction activities are completed. The charges to the SAR panels complement the ATR process and do not duplicate it. A SAR is to be provided by an A/E firm contracted by the Requester or arranged with another government agency external to USACE. For a SAR, selection of the review panel members will be guided by the National Academy of Science (NAS) Policy which sets the standard for "independence" in the review process. The

Requester's Design of Record A/E CANNOT procure the experts. A site visit will be scheduled for the SAR Team. The Requester's SAR Plan is included as Attachment 4.

Decision-Level Determination

In accordance with EC 1165-2-216, Par. 6.t, the proposed alterations will require District recommendation, Division concurrence, and HQUSACE approval. The 408 decision process will begin after the developer submits their 60% design documentation. Each alteration may be submitted separately or together depending on the developer's schedule. One hundred percent (100%) design documents must be complete and approved by the district before any construction takes place. Should an alteration be delayed in schedule, either this review plan will be modified accordingly or a separate review plan and Summary of Findings will be developed for that alteration

d. District Review Purpose

The review of all work products will be in accordance with the guidelines established within this RP. The ATR will serve as the District's review of the request. The purpose of this review is to ensure the proper application of established criteria, regulations, laws, codes, principles and professional practices.

For the purposes of Section 408, the ATR team will make the following determinations:

- Impair the Usefulness of the Project Determination. The objective of this
 determination is to ensure that the proposed alteration will not limit the ability of
 the project to function as authorized and will not compromise or change any
 authorized project conditions, purposes or outputs.
- 2) Injurious to the Public Interest Determination. Proposed alterations will be reviewed to determine the probable impacts, including cumulative impacts, on the public interest. The decision whether to approve an alteration will be determined by the consideration of whether benefits are commensurate with risks.
- 3) Legal and Policy Compliance Determination. A determination will be made as to whether the proposed alteration meets all legal and policy requirements.

3. District-Led Agency Technical Review

The District-led Agency Technical Review Team is comprised of reviewers with the appropriate independence and expertise to conduct a comprehensive review in a manner commensurate with the type of proposed alterations described in Section 1.c of this RP.

a. Review Procedures.

Reviews will be conducted in a fashion which promotes dialogue regarding the quality and adequacy of the required documentation. The ATR team will review the documents provided. DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process.

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

- The review concern identify the 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 district's ability to make a decision as to whether to approve or deny the Section 408 request.
- 4) The probable specific action needed to resolve the concern identify the action(s) that the Requester 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 must include the text of each ATR concern, a brief summary of the pertinent points in any discussion, including any vertical coordination, and the agreed upon resolution.

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, RMO, MSC, 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, Attachment H, as appropriate. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

The Hydropower Design Center (HDC) is required to review the design documentation per ER 1110-2-1454 and ER 10-1-53. The HDC will be reviewing the submittals concurrently with the ATR team. The reviewers and their specialties are listed in the ATR Team roster. HDC will receive all submittals the District receives and be invited to any meetings with the Requester.

b. Products to Undergo ATR

For each ATR event, the ATR team will examine, as part of its ATR activities, relevant QC records and provide written comment in the ATR report as to the apparent adequacy of the QC effort for the associated products or services. The District will conduct technical reviews of the Requester's plans and specifications, attend the Requester's design meetings as applicable, and perform field inspections as necessary to ensure compliance with any requirements of the Section 408 Permission. The Requester will be required to provide all design documents, plans, and specifications for District review and approval during the design phase and prior to the start of construction activities. The Requester will provide the District with the necessary documentation and as-built drawings of all facilities.

c. Required ATR Team Expertise and Requirements

The following table provides the minimum required disciplines and expertise of the ATR members.

ATR Team	
	The ATR lead should be a senior professional with experience in
ATR Lead	Dam Engineering, Hydropower Section 408 reviews and conducting ATR.
	The ATR reviewer should be a senior engineer with experience in
	construction engineering to include: dams, modifications to dams,
Engineering	cofferdams, construction scheduling & sequencing, quality control
Construction	and safety.
	The ATR reviewer should be a senior operations manager with
	experience in dam operations. This should include flows from the
Operations Manager	outlet works, local soil and geologic patterns,
	The ATR reviewer should be a senior engineer with experience in
	electrical engineering on dam equipment including assessment and
Electrical Engineer	maintenance of control gates.
Mechanical Engineer	The ATR reviewer should be a senior engineer with experience with
	mechanical engineering aspect of powerplant design. The reviewer
	should also have experience in design of closure structures such as
	those found at flood control and hydropower facilities.

Geotechnical Engineer	The Geotechnical Engineering team member should be a senior-level geotechnical engineer with experience in the field of geotechnical engineering, analysis, design, and construction of embankment dams. The team member should have knowledge and experience in the forensic investigation and evaluation of seepage and piping, settlement, slope stability, and deformations problems associated with embankments constructed on weathered and jointed rock and alluvial soils. The team member should have experience in failure mode analysis, risk assessment of embankment dams, and evaluating risk reduction measures for dam safety assurance projects.
Structural Engineer	The ATR reviewer should be a senior structural engineer with experience in dam construction and with design and construction of concrete hydraulic structures, especially spillways and outlet works.
Hydraulic Engineer	The ATR reviewer should be a senior hydraulics engineer with experience in hydraulic modeling as it relates to dams and dam construction; and reservoir regulation.
Geologist	The ATR reviewer should be a senior geologist with experience in dam design, performance monitoring, foundation improvement (jet grouting, dewatering, cofferdam design) in addition to dam construction, and familiarity with dam foundations with similar site conditions.
Dam Safety	The ATR reviewer should be a senior engineer with experience in dam safety and should have prior experience with risk assessment. Specifically, as it relates to cofferdams, slope stability, flow along a conduit, etc
Office of Counsel	The ATR reviewer should be a senior-level attorney with 5 or more years of legal experience.
Real Estate	The ATR Reviewer should be a senior real estate representative.
HDC	HDC ATR reviewers should be a senior design representatives. They will include a Senior Hydrowpower Expert, Mechanical expert, and Power systems expert.
Local Project Reviewer (Dam & Recreation)	Local (project level) person(s) with innate knowledge of dam and recreation activities at the projects.

d. Completion and Certification of the ATR

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:

- (1) Identify the document(s) reviewed and the purpose of the review;
- (2) Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- (3) Include the charge to the reviewers;
- (4) Describe the nature of their review and their findings and conclusions;
- (5) Identify and summarize each unresolved issue (if any); and
- (6) 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 may be 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 completion of ATR and Certification of ATR. It will certify that the issues raised by the ATR team have been resolved (or elevated to the vertical team). The completion and certification should be completed based on the work reviewed to date for the project. A Sample Completion of ATR and Certification of ATR is included in Attachment 1.

The ATR team members will determine whether the proposed alteration would impair the usefulness of the federal project, be injurious to the public interest, or meets legal and policy requirements. ATR team members will provide their ATR report to the District Section 408 Coordinator, who will use the comments to determine if the proposed alteration can be approved in accordance with EC 1165-2-216. Conflicts in addressing ATR comments will be elevated to the functional chief and MVD for resolution if necessary. Following ATR, the district Section 408 coordinator will compile a summary of findings as described in Section 5 of this document.

4. Requester-Led SAR

a. RESERVED

b. Completion and Certification of the IEPR

The SAR will be managed by an A/E (OEO) firm which meets the criteria set forth in EC 1165-2-214. DrChecks review software may be used to document the SAR comments and aid in the preparation of the Review Report but is not required.

Comments should address the adequacy and acceptability of the engineering, models, and analyses used. SAR comments should generally include the same four key parts as described for ATR comments in Section 3.a.

The 60% SAR Review Report covering the review of implementation documents will be provided to MVK. The district will use this report to aid in their preparation of the Summary of Findings. This Review Report will accompany the publication of the final report for the project and shall: Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;

- (1) Include the charge to the reviewers;
- (2) Describe the nature of their review and their findings and conclusions; and
- (3) 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.

This review report, including reviewer comments and a recommendation letter, will be provided to the RMC as soon as they become available. A suggested report outline is an introduction, the composition of the review team, a summary of the review during design, a summary of the review during construction, any lessons learned in both the process and/or design and construction, and appendices for conflict of disclosure forms, for comments to include any appendices for supporting analyses and assessments of the adequacy and acceptability of the methods, models, and analyses used. All comments in the report will be finalized by the panel prior to their release to USACE for each review plan milestone. Written responses to the IEPR Review Report will be prepared to explain the agreement or disagreement with the views expressed in the report, the actions undertaken or to be undertaken in response to the report, and the reasons those actions are believed to satisfy the key concerns stated in the report (if applicable). These comment responses will be provided to the RMC for concurrence.

The Requester will prepare responses except that issue resolution will be a dual responsibility between the product provider and USACE, with USACE having the final authority. The revised submittal will be provided to the RMO with the USACE response and all other materials related to the review. After the MSC Commander's approval of the District's responses to the SAR report, the District will make the report and responses available to the public on the District's website located at the following http://www.mvk.usace.army.mil/Missions/CivilWorks/PeerReviewPlans.aspx.

5. Summary of Findings

A separate Summary of Findings will be compiled for each project in accordance with EC 1165-2-216. Each Summary of Findings will be reviewed and endorsed by the district Dam Safety Program Manager, the district Dam Safety Officer, district counsel, and other district leadership before recommending to the District Commander that the proposed alteration be recommended for approval or denied. If the district commander recommends approval of the alteration, a request with the summary of findings will be sent to MVD for review. MVD will either recommend approval of the alteration or deny the request. If MVD recommends approval the package will then be forwarded to USACEHQ for final approval or denial of the permission to alter the project(s). It should be noted that the four Summary of Findings may be submitted as one package or as individual packages depending on the requestor's schedule.

6. Review Schedule and Cost

a. Schedule

To the extent practical, reviews should not extend the design schedule but should be embedded in the design process. Reviewers should be involved at key decision points and are encouraged to provide timely over the shoulder comments. Provide an overall review schedule that shows timing and sequence of all reviews. (The schedule below is based on current projections for all four alterations.)

PROJECT PHASE/SUBMITTAL	REVIEW START DATE	REVIEW END DATE
ATR 30% Review	TBD	TBD
IEPR 60%	TBD	TBD
ATR 60% Review	TBD	TBD
DSO/DSPM Review	TBD	TBD
Summary of Findings	TBD	TBD
DSOG Review	TBD	TBD
Submit to MVD for Review	TBD	TBD
Submit to HQ for Review	TBD	TBD
ATR 90% Review	TBD	TBD
IEPR 100%	TBD	TBD
ATR 100% Review	TBD	TBD
ATR 100% Backcheck	30 days from end of review	TBD
ATR Certification	TBD	TBD
IEPR for construction	TBD	TBD

b. Cost

ATR

The preliminary review schedule is listed in Attachment 7. The estimated cost for the ATR of all four alterations is approximately \$1,000,000. Funding is provided by HQUSACE and is requested quarterly.

7. Public Participation of Review Plan

As required by EC 1165-2-214, the approved RP will be posted on the District public website (http://www.mvk.usace.army.mil/Missions/CivilWorks/PeerReviewPlans.aspx.).

The public will have 30 days to provide comments on the documents. The Section 408 Coordinator will consider any comments received during that period and determine if revisions to this RP are necessary. This engagement will ensure that the RP is responsive to the interests of a wide array of stakeholders and customers.

8. Review Plan Points of Contact

Name/Title	Organization	Email/Phone	

ATTACHMENT 1: COMPLETION OF AGENCY TECHNICAL REVIEW – ARKABUTLA

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 1165-2-214. 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 DrChecks**

The ATR have been resolved and the comments have been closed in DrChecks**

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The ATR have been resolved and the comments have been closed in DrChecks**

SIGNATURE	
Name	Date
ATR Team Leader	
Office Symbol/Company	
SIGNATURE	
Name	Date
408 Coordinator	
Office Symbol	
	s
SIGNATURE	
Nathan Snorteland	Date
Director	
CEIWR-RMC	
CERTIFICATION OF AGENCY T	TECHNICAL REVIEW
Significant concerns and the explanation of the resolution are as <i>their resolution</i> . As noted above, all concerns resulting from the	
SIGNATURE	
Name	Date
Chief, Engineering Division (home district)	
Office Symbol	
SIGNATURE	
Name	Date
Dam Safety Officer ² (home district)	
Office Symbol	
1	

¹ Only needed if some portion of the ATR was contracted

²Only needed if different from the Chief, Engineering Division.

ATTACHMENT 1: COMPLETION OF AGENCY TECHNICAL REVIEW - SARDIS

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 1165-2-214. 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 DrChecks**

Output

Description

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SIGNATURE	
<u>Name</u>	Date
ATR Team Leader	
Office Symbol/Company	
SIGNATURE	
Name	Date
408 Coordinator	2
Office Symbol	
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SIGNATURE	
Nathan Snorteland	Date
Director	
CEIWR-RMC	
CERTIFICATION OF AGEN	CY TECHNICAL REVIEW
Significant concerns and the explanation of the resolution a	re as follows: Describe the major technical concerns and
their resolution. As noted above, all concerns resulting fro	m the ATR of the project have been fully resolved.
SIGNATURE	
Name	Date
Chief, Engineering Division (home district)	
Office Symbol	
SIGNATURE	
Name 2 0 0 0 0 2 1 1 1 1 1 1	Date
Dam Safety Officer ² (home district)	
Office Symbol	

¹ Only needed if some portion of the ATR was contracted

² Only needed if different from the Chief, Engineering Division.

ATTACHMENT 1: COMPLETION OF AGENCY TECHNICAL REVIEW - ENID

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 1165-2-214. 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 DrChecks**

Output

Description:

from the ATK have been resolved and the comments have	been closed in Dicheeks .
SIGNATURE	
Name	Date
ATR Team Leader	
Office Symbol/Company	
SIGNATURE	
Name	Date
408 Coordinator	
Office Symbol	
	-
SIGNATURE	
Nathan Snorteland	Date
Director	
CEIWR-RMC	
CERTIFICATION OF AGEN	NCY 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	om the ATR of the project have been fully resolved.
SIGNATURE	_
<u>Name</u>	Date
Chief, Engineering Division (home district)	
Office Symbol	
SIGNATURE	
<u>Name</u>	Date
Dam Safety Officer ² (home district)	
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Office Symbol

¹ Only needed if some portion of the ATR was contracted

² Only needed if different from the Chief, Engineering Division.

ATTACHMENT 1: COMPLETION OF AGENCY TECHNICAL REVIEW - GRENADA

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 1165-2-214. 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.

from the ATR have been resolved and the comments have	been closed in breneens.
SIGNATURE	
<u>Name</u>	Date
ATR Team Leader	
Office Symbol/Company	
SIGNATURE	
Name	Date
408 Coordinator	
Office Symbol	
SIGNATURE	
Nathan Snorteland	Date
Director	
CEIWR-RMC	
CERTIFICATION OF AGEN	NCY TECHNICAL REVIEW
Significant concerns and the explanation of the resolution a their resolution. As noted above, all concerns resulting from	
SIGNATURE	
<u>Name</u>	Date
Chief, Engineering Division (home district) Office Symbol	
SIGNATURE	_
<u>Name</u>	Date
Dam Safety Officer ² (home district)	

Office Symbol

¹ Only needed if some portion of the ATR was contracted

² Only needed if different from the Chief, Engineering Division.