ATTACHMENT 5: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number

ATTACHMENT 6: RECOMMENDATION FROM VICKSBURG ENGINEERING CHIEF FOR TYPE II IEPR

Addition of Hydroelectric Power Generating to the following Civil Works Projects for the Yazoo Basin, Mississippi Lakes Projects at: Arkabutla, Enid, Grenada and Sardis Lakes

EXPLANATION OF RATIONALE FOR RECOMMENDATION TO CONDUCT A TYPE II IEPR SAFETY ASSURANCE REVIEW (SAR)

Determination of Need to conduct a Type II IEPR (aka SAR):

The proposed work consists of constructing hydropower components to each of the four (4) Mississippi Corps Dams - Arkabutla Dam, Enid Dam, Grenada Dam, and Sardis Dam. This is non-routine design and construction, and an IEPR could provide technical and procedural comments that lessen the risk of these projects. Since a failure at any of these structures have the consequences of loss of life, a Type II IEPR is required to be performed as per EC 1165-2-214. Furthermore, the fact that new techniques and innovative materials will most likely be used during the design and construction phases is also a requirement to perform a Type II IEPR. The project will be designed by a reputable engineering firm with a substantial reviews by MVK Engineering & Construction and Operations Divisions.

Background Information about Project:

The proposed work includes all required design and construction to modify the existing Civil Works Projects for the Yazoo Basin, Mississippi Lakes Projects at Arkabutla, Enid, Grenada and Sardis Lakes to provide for the Addition of Hydroelectric Power Generating. The projects are located at four separate locations in the Mississippi Delta, situated in northwestern Mississippi. The current DSAC Ratings for each of the dams are [redacted]

The primary purpose of the projects is Flood Control, however each of the lakes provides recreation and environmental benefits as well. The operating plan and guide curve for mandating releases will not change with the addition of these features. In general, the four projects have a similar basic design configuration at the outlet works, however there are construction or design nuances that make each unique. Modification to the design configuration for each dam is essentially identical, with each consisting of a new powerhouse located in the tailrace of project outlet works. 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. 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.

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.

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.

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.

Rye Development is the Section 408 Permission Requestor and has obtained licenses from FERC for the individual projects. The MS Lakes Hydroelectric Project consists of the Arkabutla Lake Hydroelectric Project (FERC Project No. 13704-002), Enid Lake Hydroelectric Project (FERC Project No. 13703-002), Grenada Lake Hydroelectric Project (FERC Project No. 13702-002), and the Sardis Lake Hydroelectric Project (FERC Project No. 13701-002). The proposed projects will be constructed at the Corps' existing Arkabutla, Enid, Grenada, and Sardis Dams located within the Yazoo River Basin in Mississippi.

RECOMMENDATION REGARDING TYPE II IEPR (SAR)

Based on the above assessment, it is the risk-informed recommendation of the Project Delivery Team and the Chief of Engineering and Construction that a Type II IEPR (SAR) is required for this project.

The decision to conduct a Type II IEPR (SAR) is recommended by:

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HENRY A. DULANEY, P.E.
Chief, Engineering and Construction Division

6/22/2016
Date

ATTACHMENT 7

ATR COST SCHEDULE