



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
SOUTH ATLANTIC DIVISION
60 FORSYTH STREET SW, ROOM 10M15
ATLANTA, GA 30303-8801

CESAD-PDP

25 JAN 2013

MEMORANDUM FOR Commander, Mobile District (CESAM-PD/C. Flakes)

SUBJECT: Review Plan Approval for Allatoona Powerhouse Limited Reevaluation Report

1. References:

a. Memorandum, CESAM-PD-FE, 25 Oct 2012, subject: Allatoona Limited Reevaluation Report (LRR), Allatoona Powerhouse, Bartow County, Georgia

b. EC 1165-2-209, Civil Works Review Policy, 31 January 2010

2. The enclosed Review Plan for the Allatoona Limited Reevaluation Report has been prepared in accordance with Engineer Circular (EC) 1165-2-209. The Review Plan has been coordinated with the National Hydroelectric Design Center of Expertise (CENWP-HDC-H) of the North Western Division, which is the lead office to execute this plan. For further information, please contact the CENWP-HDC-H at (503) 808-4221. As the Major Rehab action calls for replacement of existing turbines, per EC 1165-2-209 the Review Plan does not require independent external peer review.

3. I hereby approve this Review Plan, which is subject to change as circumstances require, consistent with study development under the Project Management Business Process. Subsequent revisions to this Review Plan or its execution will require new written approval from this office. The District shall post the approved Review Plan and a copy of this approval memorandum to the SAM District public internet website and provide a link to the CENWP-HDC-H for their use. Before posting to the website, the names of Corps employees should be removed from the Review Plan.

4. The point of contact for this action is Mr. Terry Stratton at (404) 562-5228.

Encl

DONALD E. JACKSON, JR.
COL, EN
Commanding

**Review Plan
For
Limited Reevaluation Report**

May 2011

ALLATOONA POWERHOUSE

**ETOWAH RIVER, GEORGIA
MAJOR REHABILITATION
EVALUATION REPORT**

Mobile District

THE INFORMATION CONTAINED IN THIS PEER REVIEW PLAN IS DISTRIBUTED SOLELY FOR THE PURPOSE OF PREDISSEMINATION PEER REVIEW UNDER APPLICABLE INFORMATION QUALITY GUIDELINES. IT HAS NOT BEEN FORMALLY DISSEMINATED BY THE U.S. ARMY CORPS OF ENGINEERS, MOBILE DISTRICT. IT DOES NOT REPRESENT AND SHOULD NOT BE CONSTRUED TO REPRESENT ANY AGENCY DETERMINATION OR POLICY.



**US Army Corps
of Engineers ®**

REVIEW PLAN
FOR
LIMITED REEVALUATION REPORT

ALLATOONA POWERHOUSE
ETOWAH RIVER, GEORGIA

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PURPOSE AND REQUIREMENTS

- a. **Purpose.** This Review Plan defines the scope and level of peer review for the Limited Reevaluation Report (LRR) for the Allatoona Powerhouse Major Rehabilitation Evaluation Report approved in 2000, August. The purpose of the LRR is to confirm that the recommendations of the 2000 Major Rehabilitation Report remain economically justified, environmentally acceptable and policy complicant. The goal of this Review Plan is to state what will be done to ensure a quality report document, that is the LRR, and to include support for the appropriate level of review.
- b. **Applicability.** This review plan covers the review process for the LRR in conformance with the following references.
- c. **References.** The following documents were used as references in this LRR:
 - (1) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2010
 - (2) EC 1105-2-407, Model Certification, 31 May 2005
 - (3) Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
 - (4) ER 1105-2-100, Planning Guidance Notebook, Appendix F, Continuing Authorities Program, Amendment #2, 31 Jan 2007
 - (5) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007
 - (6) ER and EP 500-1-1
 - (7) EC 11-2-200 CORPS OF ENGINEERS CIVIL WORKS DIRECT PROGRAM PROGRAM DEVELOPMENT GUIDANCE FISCAL YEAR 2013
- a. **Requirements.** This review plan was developed in accordance with EC 1165-2-209, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and operation, maintenance, repair, replacement and rehabilitation (OMRR&R). The EC outlines four general levels of review: District Quality Control/Quality Assurance (DQC), Agency Technical Review (ATR), Independent External Peer Review (IEPR), and Policy and Legal Compliance Review.

BACKGROUND

In March of 2000 a Major Rehabilitation Evaluation Report was completed for the Allatoona Hydropower Powerhouse equipment located on the Etowah River in Bartow County, Georgia. This major rehabilitation study was conducted to evaluate the reliability and efficiency of the Allatoona hydropower generating equipment and identify alternatives that would restore the reliability and efficiency of the plant by returning the units to their original condition. The report presented the technical, environmental, and economic analyses with supporting documentation for the purpose of demonstrating the need and justification for major rehabilitation of the project.

The 2000 Major Rehabilitation Evaluation Report identified Alternative M17 as the recommended powerhouse rehabilitation plan for the Allatoona Powerhouse. Alternative M17 consisted of a new re-

rated turbine, turbine venting, a downstream weir, new main transformers, and a reconfigured low-profile ring-bus switchyard.

Alternative M17 also incorporated an alternative for the Powerhouse's small unit which was Alternative S5. Alternative S5 was not approved and consisted of the following:

- (1) selective withdrawal- a method where water is discharged by pulling water from the upper layer of the lake (flexible curtain wall, vertically adjustable intake mechanism at the entrance to the sluice
- (2) new governors for the small unit
- (3) new exciters for the small unit
- (4) new voltage regulators for the small unit
- (5) new 13.8 kV and low voltage station service for the small unit
- (6) miscellaneous mechanical and electrical for the small unit

In August of 2000, HQ U.S. Army Corps of Engineers approved the recommended plan M17 from the Major Rehabilitation Evaluation Report for the major rehabilitation program; except, Alternative S5, which was part of M17, was not approved to be included in the major rehabilitation program.

DESCRIPTION OF WORK FOR REVIEW

- a. **Guidance.** According to ER 1105-2-100, Chapter 4-1, subheading 2, titled Limited Reevaluation, page 4-2, an LRR provides an evaluation of a specific portion of plan under current policies, criteria and guidelines. The scope may be limited to economics, environmental effects or, in rare cases, project formulation. This LRR for the Allatoona Major Rehabilitation Evaluation Report will be limited to evaluation of economics and environmental effects of the remaining hydropower equipment that has not been replaced since March 2000 when the original rehab report was approved.
- b. **Work Product.** The purpose of the LRR is to reevaluate the approved recommended plan, M17 (excluding S5, which was not approved in 2000), in regards to a reduced scope of work, and to update the economics for M17 reflecting current conditions at the Allatoona Powerhouse. This reevaluation has become necessary because the Economics from the 2000 report has become outdated. The Allatoona Powerhouse has secured, through customer funding from the Southeastern Power Administration, some of the components that were in the approved in Plan M17 of the 2000 Major Rehabilitation Evaluation Report. These components include new transformer and switchyard. The downstream weir component is not needed because it does not add to the operating efficiency of the powerhouse units. Therefore, reevaluation of the approved M17 alternative, which would consist of only a new re-rated turbine and turbine venting, is needed because this reduced scope of work in Alternative M17 would need to be reflected. This LRR will provide an adjustment of economic benefits and costs along with an adjustment in environmental considerations. The LRR project delivery team is listed in Attachment 1 of the review plan.

DISTRICT QUALITY CONTROL (DQC)

DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan. The LRR will undergo a DQC.

The DQC review team was responsible for performing a technical review of the LRR including appendices. Duties of the DQC team include the following:

- 1) Review report contents for compliance with established principles and procedures, using clearly justified and valid assumptions.
- 2) Review methods and procedures used to determine appropriateness, correctness and reasonableness of results.
- 3) Provide the Agency Technical Review team leader with documentation of comments, issues, and decisions arising out of the DQC review. Comments, and resolutions, will be documented in a Microsoft Word document or by using DrChecks.

AGENCY TECHNICAL REVIEW (ATR)

Agency Technical Review (ATR) is undertaken to "ensure the quality and credibility of the government's scientific information" in accordance with Engineering Circular 1165-2-209, and the Quality Manual of the responsible Major Subordinate Command(MSC). This level of review was previously named "Independent Technical Review". ATR is conducted by qualified reviewers outside of the home District where the report is prepared with the ATR team lead being from outside of the home MSC to help ensure independence and integrity of the review.

The LRR will undergo an Agency Technical Review (ATR) to ensure consistency with established criteria, guidance, procedures, and policy. The ATR will assess whether the analyses presented are technically correct and comply with published Corps guidelines. Skilled and experienced personnel who have not been associated with the development of the LRR will perform the ATR.

- a. Required ATR Team Expertise.** The ATR team consists of individuals that represent the significant disciplines involved in the accomplishment of the work. The ATR will be managed within the Corps and conducted by senior USACE personnel outside of the Mobile District who are not involved in the day to day production of the project. The ATR lead will be outside the MSC and complete a statement of technical review for the document.

ATR Team Members/Disciplines	Expertise Required
ATR Lead	The ATR lead should be a senior professional with experience in preparing decision documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. Typically, the ATR lead will also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc).
Planning	The team member should be a senior water resources planner with experience in general planning policy and guidance.
Economics	The team member should have extensive knowledge of economic planning and economic calculations.
Environmental Resources	The team member should have extensive knowledge of the integration of environmental evaluation and compliance requirements, pursuant to National Environmental Policy Act (NEPA) statutes, applicable executive orders and

	other Federal planning requirements, into the planning of Civil Works comprehensive plans and implementation projects.
Cost Engineering	The team member should be familiar with the most recent version of Micro-Computer Aided Cost Estimating System II (MCACES II) software and total project cost summary.

b. Documentation of ATR. DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. The review comments included:

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

c. Certification. By signing the ATR certification, the district leadership certifies policy compliance of document and also that the ATR activities were sufficient and documented.

INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

Independent External Peer Review (IEPR) is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. Any work product, report, evaluation, or assessment that undergoes DQC and ATR also may be required to undergo IEPR under certain circumstances. A risk-informed decision will be made as to whether IEPR is appropriate for that product.

The LRR covered under this review plan is excluded from IEPR because it does not meet the mandatory IEPR triggers and does not warrant IEPR based on heading 11, subheading (b) on page 11 of EC 1165-2-209. The LRR involves only the rehabilitation or replacement of existing hydropower turbines and is therefore excluded from Type I IEPR.

The project as outlined in LRR addresses replacement of hydropower turbines, and there is no life safety issues being addressed. In addition, no private lands will be impacted during project construction or future operation and maintenance. Furthermore, this action is not controversial, and an IEPR would not materially benefit the final decision.

MODEL CERTIFICATION AND APPROVAL

The Hydro-Repair model, a USACE model, will be used in economic calculations for the LRR. Hydro-Repair, a Monte Carlo simulation model, seeks to "duplicate" the behavior of the system under investigation by studying the interactions among its components. In this investigation the model seeks to simulate the behavior of the Allatoona hydropower system by studying the interactions between the generating units and the hydrologic system on which it depends for the production of power. The model estimates annual net power generation, forced outage rates and the costs of future rehabilitative actions for a variety of alternate future actions. The Hydro-Repair model was also used in the 2000 Allatoona Powerhouse Major Rehabilitation Evaluation Report. The model was Corps-approved for use for Power Major Rehabilitation studies, but there is no model certification for it and currently no plans to certify it.

POLICY AND LEGAL COMPLIANCE REVIEW

All decision documents will be reviewed throughout the study 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 MSC (i.e. South Atlantic Division) commander. The DQC and ATR augment and complement the policy review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of findings in decision documents.

REVIEW MANAGEMENT ORGANIZATION (RMO)

The RMO for this LRR is USACE Hydroelectric Design Center (HDC). The HDC will also complete the ATR and any aspects of the ATR for the LRR.

MAJOR SUBORBINATE COMMAND (MSC)

The MSC for this LRR is USACE South Atlantic Division (SAD). The MSC is responsible for approving this review plan as prepared by Mobile District. Approval is provided by the SAD commander. Changes in the review plan will be approved by following the process used initially in approving the plan by SAD.