DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, NORTHWESTERN DIVISION
PO BOX 2870
PORTLAND OR 97208-2870

CENWD-RBT

0 1 APR 2013

MEMORANDUM FOR Commander, Seattle District (CENWS-EN-HH)

SUBJECT: Review Plan (RP) Approval for Libby Dam Probable Maximum Flood Determination, Seattle District

1. References:

a. RP for Libby Dam Probable Maximum Flood Determination, Seattle District, (Encl).

b. EC 1165-2-214 1, Civil Works Review, 15 December 2012.

2. Reference 1.a. above has been prepared in accordance with reference 1.b. above.

3. The RP has been coordinated with the Business Technical Division, Northwestern Division, U.S. Army Corps of Engineers. The review plan includes District Quality Control (DQC) and Agency Technical Review (ATR). NWD will be the Review Management Office (RMO) for the ATR. The RMO Point of Contact is Brad Bird, 503-808-3857.

4. I hereby approve this RP, which is subject to change as circumstances require, consistent with the study development process and the Project Management Business Process. Subsequent revisions to this RP or its execution will require written approval from this office.

5. For further information, please contact Mr. Steve Bredthauer, NWD Technical Review Program Manager, at (503) 808-4053.

Encl

ANTHONY C. FUNKHOUSER, P.E.
BG, USA
Commanding

CF: RMC

Printed on Recycled Paper

ATR REVIEW PLAN

USING THE NWD ATR REVIEW PLAN TEMPLATE

Project Name: Libby Dam Probable Maximum Flood Determination
Project Location: Libby Dam, Libby Montana
Project P2 Number: 352036
Project Manager or POC Name: Adam Price
NWD Original Approval Date: XX
NWD Revision X Approval Date: XX

General Document Information

The first two pages of this document are the Cover sheet and the Table of Contents and are not numbered.

Review Plan Template. Information provided in **PAGES 3-8** is Review Plan Template information for ATR for Implementation Documents and Other Work Products. Do not alter. The controlled (approved) version of this template will be maintained on the NWD SharePoint site. Districts must use the most current version from the NWD SharePoint site and avoid shared versions outside of the NWD SharePoint. See the footer information in the template for document location.

Attachment 1 provides the review plan Review Plan Specifics that supplement the RP Template. These specifics are prepared by the District team and as coordinated with the NWD.

Attachment 2 provides acronyms and abbreviations for the document and may be altered as necessary.

Review Plan approval memorandums shall be documented with the RP and the dates recorded on the cover sheet.

US Army Corps
of Engineers ®

Approved Version: 13 July 2011. Printed Copies are for "Information Only". The controlled version resides on the shared documents folder of the NWD SharePoint site at: EC 209 Implementation Guidance_ATR Template_Enclosure 2

DQC/ATR REVIEW PLAN

TABLE OF CONTENTS

1. PURPOSE AND REQUIREMENTS. 3
2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION 4
3. REVIEW FUNDAMENTALS 4
4. DISTRICT QUALITY CONTROL (DQC) 4
5. AGENCY TECHNICAL REVIEW (ATR) 5
6. REVIEW DOCUMENTATION 5
7. RISK INFORMED DECISIONS 6
8. POLICY AND LEGAL COMPLIANCE REVIEW 8
9. TEMPLATE APPROVAL 8

ATTACHMENT 1 - REVIEW PLAN SPECIFICS

A-1. PROJECT INFORMATION 9
A-2. REVIEW SCHEDULES AND COSTS 11
A-3. REVIEW PLAN POINTS OF CONTACT 12
A-4. PROJECT DELIVERY TEAM (PDT) ROSTER. 13
A-5. ATR TEAM ROSTER 13
A-6. REVIEW PLAN SPECIFICS - APPROVAL 13

ATTACHMENT 2 – ACRONYMS AND ABBREVIATIONS

B-1. ACRONYMS AND ABBREVIATIONS 15

ATR Review Plan for
Libby Dam Probable Maximum Flood Determination

1. PURPOSE AND REQUIREMENTS.

a. Purpose. This ATR Review Plan (RP) Template and attachments describe requirements for the project identified on the cover sheet of this document. This RP describes Agency Technical Review (**ATR**) associated with implementation documents, or other work products. The RP Template and the completed RP Specifics attachment together describe the risks considered and the review plan proposed for this project or product.

b. General Process. The PDT considers the project risks and selects an appropriate RP Template based on the risks per EC 214. The risk consideration process is determined by Districts as appropriate to develop a risk informed review plan strategy.

1) When the District has considered the project risks and determined the applicability of this template, the PM/PDT prepares the "RP Specific" information in Attachment 1 and submits with the RP Template to NWD for approval. The RP Specifics provide the essential elements of the RP such as the scope, project cost, the review team and capabilities, review schedules and budgets and points of contacts.

2) The RP Specifics are coordinated with the appropriate levels of management in the District and the NWD. Potentially the RP may also need to be coordinated with the Risk Management Center (RMC) and others such as the relevant Planning Center of Expertise (PCX) if required. This may be necessary in cases where there is debate on the project risks, required review levels, the review team composition and areas of responsibility.

3) The approved RP Specifics and RP Template information together shall describe the project scope, review plan, schedule and budget in sufficient detail to allow review and approval for the RP. The RP information is a component of the Quality Management Plan within the Project Management Plan. Once approved, the RP is documented in the project PMP/QMP and project files and also placed on the District Website for a minimum of 30 days.

c. Applicability. Applicability of the review plan template is determined by NWD. Refer to the criteria provided below. This review plan template is applicable, ONLY, for projects that;

- Are agreed to require ATR review based on risk-informed decision process.
- Are agreed to NOT require Independent External Peer Review (IEPR) or Safety Assurance Review (SAR) based on a risk-informed decision process.
- Do NOT require an Environmental Impact Statement (EIS) for the project.
- And, the project for this review plan is NOT producing decision documents.

d. References

Engineering Circular (EC) 1165-2-214, Civil Works Review, 15 Dec 2012
Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006

ER 1105-2-100, Planning Guidance Notebook, Appendix F, Continuing Authorities Program, Amendment #2, 31 Jan 2007
ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007

2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO for **ATR** is Northwestern Division (NWD) unless determined otherwise. The USACE Risk Management Center (RMC) shall serve as the RMO for Dam Safety Modification projects and Levee Safety Modification projects. NWD will coordinate and approve the review plan. The home District will post the approved review plan on its public website.

3. REVIEW FUNDAMENTALS

a. The USACE review process is based on a few simple but fundamental principles:

- Peer review is key to improving the quality of work in planning, design and construction;
- Reviews shall be scalable, deliberate, life cycle and concurrent with normal business processes;
- A review performed outside the home district shall be completed on all decision and implementation documents. For other products, a risk informed decision as described in EC 214 will be made whether to perform such a review.

b. The EC 214 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.

4. DISTRICT QUALITY CONTROL (DQC)

The RMO for DQC is the home District. In accordance with EC 214 all work products and reports, evaluations, and assessments shall undergo necessary and appropriate District Quality Control (DQC).

DQC is the internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the project Quality Management Plan (QMP) of the Project Management Plan (PMP).

The DQC is the internal quality control process performed by the supervisors, senior staff, peers and the PDT within the home District and is managed by the home District. DQC consists of;

a. Quality Checks and reviews. These are routine checks and reviews carried out during the development process by peers not responsible for the original work.

These are performed by staff such as supervisors, team leaders or other senior designated to perform internal peer reviews.

b. PDT reviews. These are reviews by the production team responsible for the original work to ensure consistency and coordination across all project disciplines.

DQC will be performed on the products in accordance with the QMP within the PMP.

5. AGENCY TECHNICAL REVIEW (ATR)

A risk informed process was completed for this project in accordance with EC 214. **See paragraph 7, RISK INFORMED DECISIONS.**

The objective of ATR is 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 USACE guidance, and that the document explains the analyses and results in a reasonably clear manner for the public and decision makers.

ATR will be conducted by a qualified team from outside the home District that is not involved with the day-to-day production of the project/product. ATR teams will be comprised of senior USACE personnel and may be supplemented by outside experts as appropriate. The ATR team lead will be from outside the home MSC. In limited cases, when appropriate and independent expertise can be secured from Centers or Laboratories or when proper expertise cannot be secured otherwise, NWD may approve exceptions.

6. REVIEW DOCUMENTATION

a) **Documentation 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:

(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; and;
(4) Where appropriate, provide a suggested action needed to resolve the comment or 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 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 1110-2-12 or ER 1105-2-100, Appendix 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.

ATR shall 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 Statement of Technical Review certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team).

7. RISK INFORMED DECISIONS

a. **ATR:** (Source: EC 214, paragraph 15). The process and methods used to develop and document the risk-informed decisions are at the discretion of the District but must be appropriate for the risk and complexity of the project. The following questions and additional appropriate questions were considered;

1. Does it include any design (structural, mechanical, hydraulic, etc)?
2. Does it evaluate alternatives?
3. Does it include a recommendation?
4. Does it have a formal cost estimate?
5. Does it have or will it require a NEPA document?
6. Does it impact a structure or feature of a structure whose performance involves potential life safety risks?
7. What are the consequences of non-performance?
8. Does it support a significant investment of public monies?
9. Does it support a budget request?
10. Does it change the operation of the project?
11. Does it involve ground disturbances?
12. Does it affect any special features, such as cultural resources, historic properties, survey markers, etc, that should be protected or avoided?
13. Does it involve activities that trigger regulatory permitting such as Section 404 or stormwater/NPDES related actions?
14. Does it involve activities that could potentially generate hazardous wastes and/or disposal of materials such as lead based paints or asbestos?

15. Does it reference use of or reliance on manufacturers' engineers and specifications for items such as prefabricated buildings, playground equipment, etc?
16. Does it reference reliance on local authorities for inspection/certification of utility systems like wastewater, stormwater, electrical, etc?
17. Is there or is there expected to be any controversy surrounding the Federal action associated with the work product?

*Note: A "yes" answer to questions above does not necessarily indicate ATR is required, rather it indicates an area where reasoned thought and judgment should be applied and documented in the recommendation.

Decision on ATR: The District considered the risks and determined that **ATR is required** considering the project risks. ATR will be performed on the products in accordance with the District QMP and this RP. **See Attachment 1** for RP Specifics.

b. **INDEPENDENT EXTERNAL PEER REVIEW (IEPR).** The District considered risks and risk triggers for Type I IEPR and Type II IEPR, also referred as a Safety Assurance Review (SAR) as described in EC 1165-2-214.

I. **Type I IEPR** is required for decision documents under most circumstances. This project does not involve the production of decision documents.

Decision on Type I IEPR: The District considered these risks and determined that **Type I IEPR is not required.**

II. **Type II IEPR (SAR).** Type II IEPR, or Safety Assurance Review (SAR), are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. Type II IEPR panels will conduct reviews of the design and construction activities prior to initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health safety and welfare.

- Any project addressing **hurricane and storm** risk management and **flood risk** management or;
- any other project where Federal action is justified by **life safety** or;
- the failure of the project would pose a **significant threat to human life.**
- This applies to new projects and to the major repair, rehabilitation, replacement, or modification of existing facilities (based on identified risks and threats).

Other Factors to consider for Type II IEPR (SAR) review of a project, or components of a project;

- The project involves 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
- The project design requires redundancy, resiliency, and robustness.
- The project has unique construction sequencing or a reduced or overlapping design and construction schedule; for example, significant project features accomplished using the Design-Build or Early Contractor Involvement (ECI) delivery systems.

Decision on Type II IEPR: Based on the information and analysis provided in the preceding paragraphs of this review plan, the project covered under this plan is excluded from IEPR because it does not meet the mandatory IEPR triggers and does not warrant IEPR based on a risk-informed analysis. The District considered these risks and determined that **Type II IEPR (SAR) is not required** for the products or project

8. POLICY AND LEGAL COMPLIANCE REVIEW

All documents will be reviewed throughout the process for their compliance with law and policy. 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 home MSC Commander. 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.

This review plan template is not intended to describe requirements and processes to conduct policy and legal compliance review, or legal sufficiency reviews.

9. TEMPLATE APPROVAL

NWD is responsible for maintaining the current version of this Review Plan template and ensuring the information accurately describes the criteria and considerations necessary to arrive at a risk informed decision. The review plan template is a living document and is subject to change.

The home District is responsible to complete the Review Plan Template Cover page, adjust the Table of Contents and the complete Review Plan specifics in **Attachment 1.** Significant changes to the review plan specifics (such as changes to the scope and/or level of review) should be re-approved by NWD. The completed Template information and the Attachment 1 will be submitted to the NWD for coordination and approval.

ATR Review Plan for
Libby Dam Probable Maximum Flood Determination

ATTACHMENT 1 - REVIEW PLAN SPECIFICS

The information in this attachment is prepared by the District PM/PDT for the project specific information required for this review plan. The DQC is managed by the District and is described in the PMP/QMP. This document should be attached or included in the PMP/QMP to document the ATR.

Reiterate Decision on Type II IEPR (SAR): This document has stated this project does not involve the production of decision documents and therefore does not reiterate a decision to exclude Type I IEPR. The project covered under this plan is excluded from Type II IEPR (SAR) because it does not meet the Type II IEPR triggers and other factors necessary to consider as described in EC 1165-2-214. Specifically, TYPE II IEPR's are required for design and construction activities for any project where potential hazards pose a significant threat to human life. As this project is neither a design nor construction activity, the District determined that **Type II IEPR (SAR) is not required** for the products or project.

A-1. PROJECT INFORMATION

a. **Study/Project Description.** Libby Dam is a major unit of the comprehensive water resource development plan of the Columbia River Basin in the United States and Canada. The project was authorized to provide storage for flood risk reduction on the Kootenai River in Montana and Idaho and on the lower Columbia River, and hydroelectric power generation at Libby Dam and at downstream powerplants. Incidental purposes of the project are navigation and recreation. Although operation for environmental mitigation and enhancement is not included in the Congressional authorization, operation for those purposes is presently required based on various court orders principally based upon designation of bull trout as threatened and Kootenai River white sturgeon as endangered under the National Environmental Policy Act.

The project provides up to 4.98 million acre-ft (MAF) of reservoir space for flood risk reduction which is designed to reduce risk for floods in the Kootenai Basin as great as the largest known flood on the Kootenai River--the flood of 1894--which was approximately a standard project flood. Protection of the local area in Montana and Idaho from loss of life and catastrophic damage during the spring/summer freshet is first priority; however, operation to protect the local area usually, incidentally, provides near optimum flood risk reduction to the lower Columbia River.

Operation for hydropower and environmental considerations is structured to be compatible with flood risk reduction operations. Operation to be in compliance with the requirements of the Biological Opinions takes priority over power operation requirements; however, the two requirements are generally compatible. Generally, operation of the project for spring/summer flood risk reduction with included environmental and hydropower considerations will cause the reservoir to be at its annual minimum in early May, and at its annual peak in June or July.

ATR Review Plan for
Libby Dam Probable Maximum Flood Determination

Based on ER 1110-8-2 (FR) guidance for Inflow Design floods (IDF), the Libby project meets the requirements of a Standard 1 dam. Due to the catastrophic consequences associated with uncontrolled releases or failure to pass large floods, Standard 1 applies and the IDF would be computed from the probable maximum precipitation, which produces the Probable Maximum Flood (PMF).

The Libby PMF Study Scope of Work was designed using ER 1110-8-2 (FR) guidance for Inflow Design floods (IDF). WEST Consultants, Inc. (WEST) is conducting the hydrologic and hydraulic study to simulate the Probable Maximum Flood (PMF) at the site of Libby Dam.

To review and analyze the PMF, WEST developed the probable maximum precipitation (PMP) using HMR 57. WEST acquired existing hydrology models to compute the runoff for the PMF given the PMP and validated these models using two historical flood events. Frequency based storms were developed using the NOAA Atlas 2 and Technical Paper-49 from the National Weather Service. The validated hydrology models were used along with the rainfall data to compute the runoff for the frequency based storm events. WEST developed a gridded Kootenai River Basin HEC-HMS model. The PMF hydrograph from the rainfall-runoff analysis was routed using a HEC-ResSim Model developed by NWS.

The following list provides a general overview of the steps followed for modeling and routing the frequency events and PMF event.

1. Develop regional hydrological model. A gridded HEC-HMS model was developed incorporating the entire basin upstream of Libby dam.
2. Hydrologic model validation. The model was validated by comparing model results to historic measurements for five historical extreme runoff events. Model parameters were adjusted (within reasonable limits) until the model was able to reproduce, as accurately as possible, observed peak flows and volumes.
3. Simulation of the PMF event using the validated hydrology models. Precipitation data for the probable maximum precipitation (PMP) event was developed following guidelines from the Hydrometeorological Report No. 57 (NOAA, 1994) for storm depth, pattern, and areal reduction. Antecedent snowpack grids were developed by NWS using inverse-distance weighting within snow bands and supplied to WEST. Basin antecedent conditions and values for the PMP were input into the hydrological model to determine the PMF inflow hydrograph to Libby Dam.
4. Simulation of Hydrograph at Libby Dam. The hydrograph will be routed through Libby reservoir and dam using a ResSim model. The primary purpose of this step is to compare the outflow hydrograph with the design capacity of the dam.

Factors Affecting the Scope and Level of Review. Factors that determine the level of review for the Libby PMF Study are as follows:

- The study will provide input for a NWS recommendation for the PMF inflow and discharge for the Libby project. However, the study is neither a decision document nor an implementation product.
- The study followed USACE guidance for computing the PMP, the PMF, and routing of the PMF through a reservoir and dam. Antecedent snowpack grids were developed by NWS using inverse-distance weighting within elevation bands, which likely requires a higher level of review compared with more simplistic methods. However, the overall study does not present any complex challenges for interpretation, precedent-setting methods or models, or recommendations to change prevailing practices.

b. **Current Total Project Cost.** The PMF study is estimated to cost approximately $80,000

c. **Required ATR Team Expertise.** ATR team and required expertise;

ATR Team Members/Disciplines	Expertise Required
ATR Lead/ Hydrology/Hydraulics	The ATR lead should be a senior professional with experience in extreme storm events and with experience conducting ATRs. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process.

A-2. REVIEW SCHEDULES AND COSTS

a. **ATR Schedule.** Instruction:

Review Milestone	Review Products	Date Planned
100% ATR review	Libby PMF Study Report including the supporting models	June 23-30, 2013
100% backcheck		July 24-31, 2013
ATR Certification		August 1-15, 2013

b. **ATR COSTS - Labor/Expenses.**

Review Milestone	#reviewers/total hours	Approximate cost/hr	Totals
100% ATR review	1/60	$120	$5400
100% backcheck	1/18	$120	$2160
ATR Certification	1/4	$120	$480
ATR Expenses	0	0	$0

(travel etc)			
Total ATR costs			$8040

c. **Engineering Models.** As part of the USACE Scientific and Engineering Technology (SET) Initiative, the models used in this study are identified either as preferred or allowed for use on Corps studies. The selection and application of the models and the associated input and output data are subject to DQC and ATR:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Approval Status
HEC-ResSim 3.0a	HEC-ResSim is designed to be used to model reservoir operations at one or more reservoirs whose operations are defined by a variety of operational goals and constraints. It will be used to route the PMF through Libby Dam.	CoP Preferred
HEC-HMS 4.0b	The Hydrologic Modeling System (HEC-HMS) is designed to simulate the precipitation-runoff processes of a watershed. It will be used to create a flood hydrograph for the PMF based on the user-input PMP information.	CoP Preferred
HEC-geoHMS 5.0	The Hydrologic Engineering Center's tool for ArcGIS is used to communicate between HEC-HMS and ArcGIS. Geographic data can be sent from ArcGIS to HEC-HMS, and HEC-HMS results can be sent back to ArcGIS.	CoP Preferred
HEC-SSP 2.0 (Statistical Software Package)	The Hydrologic Engineering Center's Statistical Software Package supports performing flood flow frequency analyses based on Water Resources Council "Guidelines for Determining Flood Flow Frequency," Bulletin 17B Guidelines, general frequency analyses, volume frequency analyses, duration analyses, coincident frequency analyses, and frequency curve combination analyses.	CoP Preferred
ESRI ArcGIS 9.3	ArcGIS is used to organize and analyze spatial data. For this project, it was employed to create distributed snowpack grids from scattered station readings.	CoP Preferred

A-3. REVIEW PLAN POINTS OF CONTACT

The Review Management Organization for ATR will be NWD unless noted otherwise.

Public questions and/or comments on this review plan can be directed to the following points of contact:

Contact	Role	Title	Office/District/Division	Phone
Adam Price	Hydraulic Engineer	Hydraulic Engineer	Seattle District, US Army Corps of Engineers	206-764-3604
Stephen Bredthauer	RMO - Point of contact	Technical Review Program Manager	Northwestern Division, US Army Corps of Engineers	503-808-4053

A-4. PROJECT DELIVERY TEAM (PDT) ROSTER.

Before posting to websites for public disclosure of the RP, it may be necessary to remove names and contact information for Corps employees to comply with security policies.

PDT Roster				
Name	Discipline/Role	District/Agency	email	Phone
Adam Price	Hydrologic Engineer Lead	Seattle/USACE	Adam.H.Price@usace.army.mil	206-764-3604
Scott Campbell	GIS Specialist	Seattle/USACE	Scott.W.Campbell@usace.army.mil	206-764-6560

A-5. ATR TEAM ROSTER

Before posting to websites for public disclosure of the RP, it may be necessary to remove names and contact information for Corps employees to comply with security policies.

Agency Technical Review (ATR) Team				
Name	Discipline/Role	District/Agency	email	Phone
Tracy Schwarz	PMP and HEC-HMS Model Reviewer	NWW	Tracy.Schwarz@usace.army.mil	509-527-7522

A-6. REVIEW PLAN SPECIFICS - APPROVAL

ATR Review Plan for
Libby Dam Probable Maximum Flood Determination

The information provided in the Review Plan Template and the Review Plan Specifics in **Attachment 1** are hereby submitted for approval.

NWD will review this plan and route by NWD staffing sheet. If the plan is complete and appropriate for the risk and complexity of the project/products, the NWD will recommend approval by the appropriate Senior Executive Service (SES) in NWD. The NWD approval memorandum will be sent to the District PM responsible for the plan. The NWD approval memorandum shall be documented with the review plan, and the approval date should be noted on the cover sheet of this document.

Approved revisions should be recorded in the A-7 block below.

A-7 REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number	Date Approved
Original			
Revision 1			

ATR Review Plan for
Libby Dam Probable Maximum Flood Determination

ATTACHMENT 2 – ACRONYMS AND ABBREVIATIONS

B-1. ACRONYMS AND ABBREVIATIONS

Acronyms	Defined
ATR	Agency Technical Review
CAP	Continuing Authorities Program
DCW	Director of Civil Works
DQC	District Quality Control
EC	Engineering Circular
ECI	Early Contractor Involvement
EIS	Environmental Impact Statement
ER	Engineering Regulation
FAQ's	Frequently Asked Questions
HQUSACE	Headquarters, U.S. Army Corps of Engineers
IEPR	Independent External Peer Review
NWD	Northwestern Division
MSC	Major Subordinate Command
PCX	Planning Center of Expertise
PDT	Project Delivery Team
PMP	Project Management Plan
QA	Quality Assurance
QMP	Quality Management Plan
QMS	Quality Management System
RIT	Regional Integration Team
RMC	Risk Management Center
RMO	Review Management Organization
RP	Review Plan
SES	Senior Executive Service
SAR	Safety Assurance Review (also referred as Type I IEPR)