



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

05 DEC 2012

CENWD-RBT

MEMORANDUM FOR Commander, Walla Walla District (CENWW-PM-PPM/Randy Chong)

SUBJECT: Review Plan (RP) Approval for Columbia River Fisheries Mitigation Work Products, Portland and Walla Walla Districts

1. References:

a. Memorandum, CENWW-PPM, 29 November 2012, subject: Columbia River Fish Mitigation (CRMF) Project, Portland and Walla Walla Districts, Northwest Division, Review Plan Submittal (Encl).

b. EC 1165-2-209 Change 1, Civil Works Review Policy, 31 January 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 and the Planning, Environmental Resources, Fish Policy and Support Division, Northwestern Division, U.S. Army Corps of Engineers. The RP includes both District Quality Control and Agency Technical Review for work products, and identifies those work products receiving technical review under the Anadromous Fish Evaluation Program.

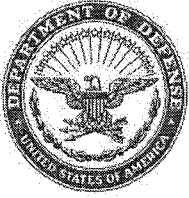
4. I hereby approve this RP, which is subject to change as circumstances require, consistent with the study development process and the Project Management Business Process. Subsequent revisions to this RP or its execution will require written approval from this office.

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

Encl

ANTHONY C. FUNKHOUSER, P.E.
COL, EN
Commanding

CF: CENWD-DDE



DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
201 NORTH THIRD AVENUE
WALLA WALLA, WA 99362-1876

REPLY TO
ATTENTION OF

CENWW-PPM

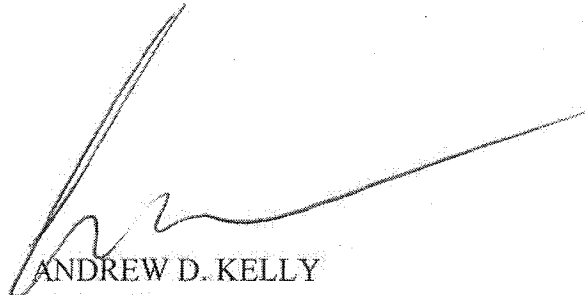
29 November 2012

MEMORANDUM FOR Commander, Northwestern Division, P.O. Box 2870, Portland, OR
97209-4141

SUBJECT: Columbia River Fish Mitigation (CRFM) Project, Portland and Walla Walla
Districts, Northwest Division, Review Plan Submittal

1. Enclosed for Major Subordinate Command (MSC) Commander approval is the overarching CRFM Project Review Plan. This review plan has been prepared in accordance with EC 1165-2-209, Civil Works Review Policy.
2. Please contact Randy Chong, CRFM Program Manager, at 509-527-7524 or email Randy.R.Chong@usace.army.mil if you have any questions or concerns with this review plan.

Encl



ANDREW D. KELLY
LTC, EN
Commanding



**PROJECT REVIEW PLAN
FOR
COLUMBIA RIVER FISH MITIGATION
WORK PRODUCTS**

Portland and Walla Walla District's

**MSC Approval Date: Pending
Last Revision Date: None**



**US Army Corps
of Engineers®**

**PROJECT REVIEW PLAN
For
COLUMBIA RIVER FISH MITIGATION
WORK PRODUCTS**

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1. PURPOSE AND REQUIREMENTS

- a. **Purpose.** This document will serve as both the Portland and Walla Walla District's (NWP and NWW) overarching project review plan for all work products within the Columbia River Fish Mitigation Project (CRFMP, CWIS 075491). This plan documents the process necessary for determining what products are required to undergo Agency Technical Reviews (ATR) in addition to District Quality Control (DQC). While it is currently not anticipated that any work product within the CRFMP will require an Independent External Peer Review (IEPR), if a project delivery team (PDT) identifies that a specific action poses a significant risk to life safety or human life, it may be subject to a Type II IEPR Safety Assurance Review (SAR). The purpose of this Project Review Plan is to ensure that a consistent review process is applied to all work products within the CRFMP, from initial planning through construction. The Chief of Engineering and Construction in each of the respective District's is responsible for ensuring that the integrity of this process is upheld for products within the CRFMP.
- b. **Applicability.** This review plan is applicable to all CRFMP work products as defined in EC 1165-2-209 Civil Works Review Policy. It lays out the process that will be used to determine the type of review that will be conducted. All CRFMP projects requiring DQC only, or are under the purview of the Anadromous Fish Evaluation Program (AFEP) as described in paragraph 5 d., fall under the umbrella of this review plan and will not require separate review plan approvals. In all cases where an ATR or IEPR is determined to be necessary for a CRFMP work product, a product specific review plan will be prepared at the time the determination is made and will be submitted for approval under separate cover.
- c. **References**
- (1) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Dec 2009
 - (2) Engineering Regulation (ER) 1105-2-100, Planning Guidance Notebook
 - (3) ER 1110-1-12, Quality Management, 30 Sep 2006
 - (4) NWP Procedure 004 (DRAFT) – Procedure for Performing Product Reviews
 - (5) NWW QMS 5502 – Civil Works Review Process (Review Plans)

2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO is responsible for managing the overall peer review effort described in this review plan. The RMO for CRFMP projects requiring DQC only will be the respective executing District. For projects requiring an ATR the RMO will be the Northwestern Division (NWD). If a Type II IEPR SAR is determined to be required the RMO will be the United States Army Corps of Engineers (USACE) Risk Management Center (RMC). The home District will post any approved product specific review plans on its public website and ensure that a copy of the approved review plan (and any updates) is provided to the dedicated review team.

3. PROJECT INFORMATION

- a. **Scope.** The CRFMP provides mitigation for the impact of Corps' dams on migrating salmon by implementing Biological Opinions (BIOPs) Reasonable and Prudent Alternatives (RPA's) for Endangered Species Act (ESA) listed salmon and steelhead in the Columbia Basin and in the estuary. Authorization to implement these actions lies within the original construction authorities for each project, and the fish and wildlife mitigation requirements for those construction activities. The

CRFMP covered under this review plan is the suite of mitigation actions to enhance juvenile and adult salmonid, steelhead and lamprey passage and survival at NWW/NWP operating dams: McNary, Ice Harbor, Lower Monumental, Little Goose, and Lower Granite within NWW; Bonneville, The Dalles and John Day on the Lower Columbia, and Detroit, Lookout Point, Foster, Cougar, and Fall Creek within the Willamette Basin in NWP. The CRFMP consists of:

- (1) Adult and juvenile fish bypass improvements at Lower Granite, Little Goose, Lower Monumental, and Ice Harbor on the Snake River; McNary, John Day, The Dalles, and Bonneville on the Columbia River, avian predation controls, and salmon survival research and development in the Lower Columbia River estuary and near-ocean environments;
- (2) A mitigation analysis, prepared in cooperation with regional interests, to evaluate additional measures to increase fish survival in the Columbia and Snake Rivers. The mitigation analysis provides the analytical process for consideration and implementation of Federal actions necessary to support regional initiatives and Federal salmon and resident fish ESA requirements;
- (3) Beginning in FY2008, evaluations, design and construction of measures to address the impacts on ESA-listed species of salmon and steelhead of construction and operation of 13 dams on the Willamette River; and
- (4) Increased efforts to improve juvenile and adult pacific lamprey passage to boost recovery and avoid additional ESA listings within the Federal Columbia River Power System (FCRPS) were initiated in FY 2009.

b. **Authorization.** 1933 Federal Emergency Administration of Public Works; 1935, 1945 and 1950 River and Harbor Acts; 1937 Bonneville Project Act; 1938, 1948, 1950 and 1954 Flood Control Acts; Water Resources Development Act (WRDA) 1986, Section 906(b)(1); WRDA 1996, Section 511, as amended by WRDA 1999, Sec.582 and WRDA 2007, Sec. 5025.

4. REVIEWS DEFINED

All work products within the CRFMP will adhere to the requirements of EC 1165-2-209 by following the guidelines established within this review plan. All engineering and design products will undergo scaled DQC Reviews. Risk factors will determine if an ATR or higher level of review is required in addition to DQC. For each work product within the CRFMP, a Quality Management Plan (QMP) will be written within the Project Management Plan (PMP). The QMP will include Quality Control Plans (QCP) and Quality Assurance Plans (QAP) required for product deliverables and identify quality control and quality assurance requirements for the overall work product, including work performed by contractors.

- a. **District Quality Control (DQC).** DQC is an internal technical review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the PMP. Basic quality control tools include a QMP as part of the PMP providing for seamless review, quality checks and reviews, supervisory reviews, and PDT reviews. The DQC is managed by the home District and is performed on all work products. CRFMP work products requiring DQC only fall under the purview of this review plan and will not require a separate product specific review plan to be submitted for approval. See EC 1165-2-209 Appendix C for detailed process description.
- b. **Agency Technical Review (ATR).** An ATR is a technical review by a qualified person or team not affiliated with the development of a project or product for the purpose of confirming the proper application of established criteria, regulation, laws, codes, principles and professional procedures. This level of review may still be referenced as "Independent Technical Review" in other guidance or

publications. Management of ATR reviews is dependent upon the phase of work and the reviews are all conducted by professionals outside of the home district. The ATR team "lead" shall be obtained from outside of the originating MSC. A product specific review plan will be submitted for approval under separate cover for all CRFMP work products determined to require an ATR. See EC 1165-2-209 Appendix C and Errata No. 2 for detailed process description.

- c. **Independent External Peer Review (IEPR).** An 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. It is not anticipated that any work products within the CRFMP will require this level of review. However, in the event that a Type II IEPR SAR level of review is required, NWP or NWW will submit a formal review plan to NWD for approval.
- d. **AFEP Review.** Through the CRFMP, NWP and NWW fund biological studies concerning anadromous fish passage on the Columbia, Willamette and lower Snake Rivers. These research, monitoring, and evaluation studies are managed under the AFEP, and are coordinated through the Study Review Work Group (SRWG) whose participants include subject matter experts from Federal, State, and Tribal fish agencies, as well as other interested stakeholders throughout the region. Study objectives are closely linked to improvements made to the hydropower system in order to answer biological questions in a timely manner. Historically, CRFMP funded studies have focused on project-specific adult and juvenile fish passage issues. However, this has been expanded to include system-level and reach survival studies, as well as juvenile and adult lamprey studies. Most passage facilities and river operations have been developed and refined in response to studies on adult fish ladders and collection channels, juvenile bypasses with turbine intake screens, juvenile fish transportation, spill for juvenile fish passage, and a comprehensive set of project/hydrosystem operating criteria. The AFEP studies evaluate passage success, survival, and fish condition for surface bypass technologies, transportation, conventional bypass systems, spill, total dissolved gas, adult migration/passage, in-river passage, and turbine passage. Most are developed as integral components of larger study and evaluation features of the CRFMP related to new passage technologies, while others evaluate existing project features.

Extensive internal and external peer review of study purposes, objectives, methods, quality assurance/quality control methods, data precision needs, etc. occurs through the formalized SRWG process within the AFEP. SRWG members review and provide comments at multiple stages of study planning, development and during the reporting stage. Additionally, as directed in 1998 by U.S. Congress Senate-House conference report for the fiscal year 1999 Energy and Water Development Appropriations bill, the Northwest Power and Conservation Council's (NPCC) Independent Study Review Panel reviews selected studies identified by the Corps and NPCC staff in order to provide an additional independent assessment of study designs, methods and goals. This is especially critical as the data produced are used to support BiOp RPA's, implementation decisions and/or to demonstrate that performance goals are being met. The data quality must be sufficient to withstand the scrutiny of litigation. As all CRFMP funded studies are developed through and reviewed under the AFEP by the SRWG, project specific review plans for study work products will not be required and instead fall under the purview of this review plan.

5. REVIEW SELECTION

Risk based assessment processes will be utilized to determine when an ATR or higher level of review is required in addition to DQC. As defined in EC 1165-2-209, all CRFMP products are categorized as "Other Work Products" as there are no decision documents requiring higher Headquarters' (HQ's) approval and the program is not implementing any actions as a result of HQ approved decision

documents. Instead, actions implemented are in response to BiOp RPA's and the project is adaptively managed with respect to the overall performance of the FCRPS hydropower system on anadromous fish survival. Therefore, "DQC Only" is an acceptable review for products where the risk is determined not to rise to the threshold that would require an ATR.

- a. **Risk Based Decisions.** Review approaches will be scalable and customized for each effort, commensurate with the level of complexity and relative importance of the actions being supported. All decisions on the types and scopes of review required on a particular product will be "risk-informed" per EC 1165-2-209. Both NWP and NWW have developed local procedures to address the risk informed decision process and preparation of review plans (NWP Procedure 004 (DRAFT) – Procedure for Performing Product Reviews and NWW QMS 5502 – Civil Works Review Process (Review Plans)). These processes will be employed to determine the level of review required and will be documented within the QMP for each specific work product.
- b. **Anticipated Level of Review.** Attachment 1 provides a listing the anticipated level of review for work products within the CRFMP.

6. REVIEW PLAN APPROVAL AND REVISIONS

The NWD Commander is responsible for approving this review plan. NWD staff will review this plan and route by NWD staffing sheet. If the plan is deemed complete and appropriate for the risk and complexity of this project, the NWD will recommend approval by the Commander. The NWD approval memorandum will be sent to the NWW CRFMP Manager who is responsible for this 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			

7. REVIEW PLAN POINTS OF CONTACT

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

- Randy Chong, 509.527.7524, CRFMP Manager, Walla Walla District
- Steve Bredthauer, 503.808.4053, Technical Review Program Manager, Northwestern Division

ATTACHMENT 1: ANTICIPATED MINIMUM LEVEL OF REVIEW

The following is a partial list of work products that the CRFMP has produced or is in the process of producing. This list has been compiled in order to illustrate anticipated minimum levels of review for the types of work within the program. It is important that this list not be used as justification for review level as it may not account for all unique factors within each work product. The unique factors will be accounted for using the risk informed decision process and it is the responsibility of the PDT to perform the steps required to determine the appropriate level of review.

1. Research, Monitoring and Evaluation – **AFEP Review**
2. Planning, Engineering and Construction
 - a. Surface Bypass
 - i. Existing Feature Minor Modifications/Replace/Rehab/Relocate – **DQC**
 1. Spillway Weir
 2. Corner Collector
 3. Sluiceways
 - ii. New Design Feature - **ATR**
 1. Spillway Weir
 2. Spillway PIT Monitoring
 3. Behavioral Guidance Structure
 - b. Adult Passage
 - i. Existing Feature Minor Modifications/Replace/Rehab/Relocate - **DQC**
 1. Fish Ladders
 2. Fish Pump Repair/Rehabilitation
 3. Auxiliary Water Supply
 4. Adult Trap Facilities
 - ii. New Design Feature - **ATR**
 1. Kelt Handling and Holding Facilities
 2. Lamprey Passage Systems
 3. Adult Trap and Transport Facilities
 4. Auxiliary Water Supply
 - c. Juvenile Collection and Bypass
 - i. Existing Feature Replace/Rehab - **DQC**
 1. Outfalls
 2. Extended Submerged Bar Screen
 3. Barge Moorage
 - ii. New Design Feature - **ATR**
 1. Outfall Relocations
 2. Juvenile Fish Facility Major Upgrade
 3. Forebay Juvenile Collection Facilities
 4. Temperature Control Structures

ATTACHMENT 2: ACRONYMS AND ABBREVIATIONS

<u>Term</u>	<u>Definition</u>	<u>Term</u>	<u>Definition</u>
AFEP	Anadromous Fish Evaluation Program	NWD	Northwest Division
ATR	Agency Technical Review	NWP	Portland District
BIOP	Biological Opinion	NWW	Walla Walla District
CRFMP	Columbia River Fish Mitigation Project	PDT	Project Delivery Team
CWIS	Civil Works Identification System	PMP	Project Management Plan
DQC	District Quality Control/Quality Assurance	QAP	Quality Assurance Plan
EC	Engineer Circular	QCP	Quality Control Plan
ESA	Endangered Species Act	QMS	Quality Management System
FCRPS	Federal Columbia River Power System	RMC	Risk Management Center
HQ	Headquarters	RMO	Review Management Organization
IEPR	Independent External Peer Review	RPA	Reasonable and Prudent Alternative
ISRP	Independent Study Review Panel	SAR	Safety Assurance Review
ITR	Independent Technical Review	SRWG	Study Review Work Group
MSC	Major Subordinate Command	USACE	U.S. Army Corps of Engineers
NPCC	Northwest Power and Conservation Council	WRDA	Water Resources Development Act