DEPARTMENT OF THE ARMY
SOUTH ATLANTIC DIVISION, CORPS OF ENGINEERS
ROOM 9M15, 60 FORSYTH ST., S.W.
ATLANTA GA 30303-8801

REPLY TO
ATTENTION OF

CESAD-PDS-P

6 September 2011

MEMORANDUM FOR Commander, Wilmington District (CESAW-TS-P/Elden Gatwood)

SUBJECT: Review Plan, John H. Kerr Dam and Reservoir, Virginia and North Carolina Section 216 Integrated Feasibility Report Study

1. References:

a. Memorandum, CESAW-TS-P, 6 April 2011.

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

2. In accordance with EC 1165-2-209, Civil Works Review Policy, 31 January 2010, the Review Plan (RP) dated February 2011, revised August 2011, for John H. Kerr Dam and Reservoir, Virginia and North Carolina Section 216 Integrated Feasibility Report Study (enclosure), has been reviewed by this office and is approved, with comments.

3. The District should take steps to post the SAD-approved Final RP and a copy of this approval memorandum to the SAW District public internet website and provide a link to the Ecosystem Restoration Planning Center of Expertise (ECOPCX) website for their use. Before posting to the website, the names of Corps/Army employees should be removed.

4. The SAD point of contact for this action is Ms. Karen Dove-Jackson, CESAD-PDS-P, (404) 562-5225.

FOR THE COMMANDER:

Encl

WILBERT V. PAYNE
Chief, Planning and Policy
Community of Practice

REVIEW PLAN

John H. Kerr Dam and Reservoir, Virginia and North Carolina
Section 216 Integrated Feasibility Report
Wilmington District

MSC Approval Date: *September 6, 2011*
Last Revision Date: *August 2011*

US Army Corps
of Engineers ®

REVIEW PLAN
John H Kerr Dam and Reservoir, Virginia and North Carolina
Section 216 Integrated Feasibility Report Study

TABLE OF CONTENTS

1. PURPOSE AND REQUIREMENTS 1
2. STUDY INFORMATION 3
3. DISTRICT QUALITY CONTROL (DQC) 4
4. AGENCY TECHNICAL REVIEW (ATR) 4
5. INDEPENDENT EXTERNAL PEER REVIEW (IEPR) 6
6. MODEL CERTIFICATION AND APPROVAL 7
7. REVIEW SCHEDULES AND COSTS 8
8. PUBLIC PARTICIPATION 8
9. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION 9
10. REVIEW PLAN APPROVAL AND UPDATES 9
11. REVIEW PLAN POINTS OF CONTACT 9

ATTACHMENT 1: ATR ROSTER 11

1. PURPOSE AND REQUIREMENTS

a. Purpose. This Review Plan defines the scope and level of peer review for the John H. Kerr Reservoir, Virginia and North Carolina, Section 216 Integrated Feasibility Report.

b. References

(1) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2010
(2) EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2011
(3) Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
(4) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007
(5) John H Kerr Section 216 Project Management Plan
(6) South Atlantic Division Quality Management Plan

c. 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. In addition to these levels of review, decision documents are subject to cost engineering review and certification (per EC 1165-2-209) and planning model certification/approval (per EC 1105-2-412).

(1) District Quality Control/Quality Assurance (DQC). All **decision documents** (including supporting data, analyses, environmental compliance documents, etc.) shall undergo 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 (PMP). The home district shall manage DQC. Documentation of DQC activities is required and should be in accordance with the Quality Manual of the District and the home Major Subordinate Command (MSC).

(2) Agency Technical Review (ATR). ATR is mandatory for all **decision documents** (including supporting data, analyses, environmental compliance documents, etc.). 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 US Army Corps of Engineers (USACE) guidance, and that the document explains the analyses and results in a reasonably clear manner for the public and decision makers. ATR is managed within USACE by a designated Risk Management Organization (RMO) and is conducted by a qualified team from outside the home district that is not involved in 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. To assure independence, the leader of the ATR team shall be from outside the home MSC.

(3) Independent External Peer Review (IEPR). IEPR is the most independent level of review, and is applied when the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. IEPR panels will consist of

independent, recognized experts from outside of the USACE in the appropriate disciplines, representing a balance of areas of expertise suitable for the review being conducted. There are two types of IEPR: Type I is generally for decision documents and Type II is generally for implementation products.

(a) Type I IEPR. Decision documents must undergo Type I IEPR unless HQUSACE grants an exclusion. Type I IEPR reviews are managed outside the USACE and are conducted on project studies. Type I IEPR panels assess the adequacy and acceptability of the economic and environmental assumptions and projections, project evaluation data, economic analysis, environmental analyses, engineering analyses, formulation of alternative plans, methods for integrating risk and uncertainty, models used in the evaluation of environmental impacts of proposed projects, and an biological opinions of the project study. Type I IEPR will cover the entire decision document or action and will address all the underlying engineering, economics, and environmental work, not just one aspect of the study. For decision documents where a Type II IEPR (Safety Assurance Review) is anticipated during project implementation, safety assurance shall also be addressed during the Type I IEPR per EC 1165-2-209.

(b) Type II IEPR. 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.

(4) 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 Chief of Engineers. 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.

(5) Cost Engineering Review and Certification. All **decision documents** shall be coordinated with the Cost Engineering Directory of Expertise (DX), located in the Walla Walla District. The DX, or in some circumstances regional cost personnel that are pre-certified by the DX, will conduct the cost ATR. The DX will provide certification of the final total project cost.

(6) Model Certification/Approval. EC 1105-2-412 mandates the use of certified or approved models for all planning activities to ensure the models are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. Planning models, for the purposes of the EC, are defined as any models and analytical tools that planners use to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take

advantage of the opportunities, to evaluate potential effects of alternatives and to support decision making. The use of a certified/approved planning model does not constitute technical review of the planning product. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR. EC 1105-2-412 does not cover engineering models used in planning. The responsible use of well-known and proven USACE developed and commercial engineering software will continue and the professional practice of documenting the application of the software and modeling results will be followed. Use of engineering models is also subject to DQC, ATR, and IEPR.

2. STUDY INFORMATION

a. Decision Document. The *Integrated Feasibility Report for the John H. Kerr Dam and Reservoir (Section 216 Study), North Carolina and Virginia* shall be the decision document. The Feasibility Study, which is authorized under Section 216 of Title II of Public Law 91-611, the Flood Control Act of 1970, as amended, will review the operation of the John H. Kerr Dam and Reservoir and report recommendations to Congress on the advisability of modifying the structures or the structures' operation and for improving the quality of the environment in the overall public interest. Information developed during the Feasibility Study may become the basis for actions specifically authorized by Congress or by the legislatures of the Sponsors, the State of North Carolina, and the Commonwealth of Virginia; addressed by the existing continuing authorities of the US Army Corps of Engineers; and for actions by non-government organizations (NGO). The Study provides interested parties an opportunity to integrate multiple perspectives and assets to achieve the common goal. The parties commit to effective and efficient management of their responsibilities for the Study, and to the sharing of information about the Study.

b. Study/Project Description. The John H. Kerr Dam is located on the Roanoke River, about 178.7 river-miles above the mouth. It is in Mecklenburg County, Virginia, 20.3 miles downstream from Clarksville, Virginia, 18 miles upstream from the Virginia-North Carolina border, and 80 miles southwest of Richmond, Virginia. Kerr reservoir is approximately 50,000 acres and extends about 39 miles up the Roanoake River. The study area includes the John H. Kerr Dam and Reservoir and the Roanoke River Basin beginning at the Dam and proceeding downstream to the Albemarle Sound. For this study, the area will be referred to as the Lower Roanoke River Basin. The Study Area is located in Charlotte, Halifax, Mecklenburg, and Brunswick Counties of Virginia, and in Granville, Vance, Warren, Halifax, Northampton, Bertie, Martin and Washington Counties of North Carolina, and it is located in the 4th and 5th Congressional District in North Carolina and the 1st and 3$^{rd.}$ Congressional Districts in Virginia.

c. Factors Affecting the Scope and Level of Review. The project would require Congressional Authorization, and the level of proposed review is reflective of that. However, the project would not pose a significant threat to human life, is not expected to cost more than $45 million, is not considered controversial, is not likely to generate significant interagency interest, and will not include novel or precedent setting approaches.

d. In-Kind Contributions. Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC, ATR, and IEPR. The State of North Carolina, as one of the non-federal sponsors, has funded several of the studies required to assess impacts and potential benefits of existing activities and proposed alternatives. These studies included 1) Roanoke River erosion and riverbank stability conducted by Virginia Tech, 2) flood damage estimates by RTI international, and 3) operating policies and administrative discretion study by the UNC School of Government. The

information from these investigations will be included in the integrated feasibility report, as appropriate, and will be reviewed as part of the report.

3. DISTRICT QUALITY CONTROL (DQC)

a. Documentation of DQC. Documentation of the technical and policy review of a specific product will be sufficient to allow both planning management and QC reviewers to feel confident that a comprehensive review was conducted in accordance with principles and guidelines established. It is expected that all in-progress review actions, review team meetings, and other significant technical review related actions will be documented in the form of a written memorandum prepared by the review leader.

b. Products to Undergo DQC. All documents will be submitted for DQC prior to Agency Technical Review.

4. AGENCY TECHNICAL REVIEW (ATR)

a. Products to Undergo ATR. All milestone products will undergo ATR.

b. Required ATR Team Expertise. The ATR will be conducted by skilled and experienced personnel in another USACE District, who have not had any prior involvement with the study. The ATR team membership will, when possible, also be entirely from outside of the USACE South Atlantic Division (SAD), which is the home division of the USACE Wilmington District. At a minimum though, the ATR team lead will be outside of SAD. It is anticipated that expertise in the following disciplines will be required from the ATR team:

- **Plan Formulation**: The reviewer should have the ability to review the planning process which should address the Nation's water resources needs in a systems context and explore a full range of alternatives in developing solutions. The reviewer should be able to recognize that innovative solutions and the application of the full range of the Corps programs and authorities are integral to the planning process. The reviewer should thoroughly understand the Planning Guidance Notebook (ER-1105-100) and the Water Resources Council's Principles and Guidelines. Reviewer should be knowledgeable of and understand the authorization, justification, and operations of Corps multi-purpose reservoirs. Experience in conducting 216 studies on Corps dams and reservoirs is also desired.
- **Economics:** The reviewer should have the ability to review the economics analysis done in the study, in particular the cost effective/incremental cost analysis that is done for ecosystem restoration projects, and NED/NER tradeoff analysis. Reviewer should be knowledgeable of and understand the authorization, justification, and operations of Corps multi-purpose reservoirs. Reviewer should understand and have experience with hydropower, flood risk management, recreations, and ecosystem benefit computation and analysis.
- **Hydropower:** The reviewer should have a thorough understanding of the application of power system analysis regarding hydropower project outputs and economic benefit evaluations for existing and new hydropower installations; the marketing and distribution of power from those facilities, and the evaluation of U.S. Treasury credits related to hydropower impacts of project storage or operation modifications.

- **Hydraulic and Hydrology:** The reviewer should have the ability at a minimum to address river hydraulics and sediment transport, hydrologic statistics and risk analysis, reservoir system analysis, planning analysis, and real-time water control management**.**
- **Water Management and Reallocation:** The reviewer(s) must have extensive knowledge of storage reallocation law, guidance, and administration policy and have participated in the development and modification of storage agreements.
- **Environmental Restoration and NEPA Compliance:** The reviewer should be able to address the integration of environmental evaluation and compliance requirements, pursuant to national environmental statutes, applicable executive orders and other Federal planning requirements, into the planning of Civil Works water and related land resources comprehensive plans and implementation projects. The reviewer should also be able to review the riparian and in-stream environmental benefits models being used in the study and assess their applicability for use.
- **Cost Engineering:** The reviewer must be a cost estimating specialist. It is imperative that estimates be prepared by, and reviewed under the supervision of, personnel who are competent in construction cost estimating. The reviewer must possess a working knowledge of construction, environmental restoration, and operation and maintenance costs, and be capable of making professional determinations based on their experience.

Additional disciplines will be added as deemed appropriate throughout the course of the study. ATR (except for cost engineering) will occur at all major report milestones. Cost engineering ATR will commence with the AFB report.

The names and qualifications of the ATR team assembled to date for this study are included in attachment 1 of this report.

c. 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 be 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) The probable specific action needed to resolve the concern – identify the action(s) that the reporting officers must take to resolve the concern.

In some situations, especially addressing incomplete or unclear information, the comment may specify that additional clarification is first needed in order to then assess whether further specific concerns may exist.

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, 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.

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:

- Identify the document(s) reviewed and the purpose of the review;
- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions;
- Identify and summarize each unresolved issue (if any); and
- 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 Statement of Technical Review certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team). A Statement of Technical Review should be completed, based on work reviewed to date, for the AFB, draft report, and final report.

5. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

a. Decision on IEPR. A Type I IEPR would be required on this study unless an exclusion is granted. Per EC 1165-2-209, a Type I (for project studies) IEPR is mandatory if any of the following criteria are true: the project poses a significant threat to human life, the estimated total cost of the project is greater than $45 million, the Governor of an affected State requests a peer review by independent experts, or the Chief of Engineers determines that the project study is controversial due to significant public dispute over either the size, nature, or effects of the project or the economic or environmental costs or benefits of the project. . Other considerations include whether the project will generate significant interagency interest, or the study will include novel or precedent setting approaches. It is not expected that any of the above criteria will be true for the Kerr 216 study. However, an exclusion from the Chief of Engineers for conducting an IEPR would require that the study also does not include an EIS. At this time, it is unknown whether an EIS (versus an EA) will be needed for the study, however it is anticipated that this decision will be made between the FSM and AFB milestones. If it is determined that an EIS is not necessary, the PDT will perform a risk-informed decision analysis on the project (as defined in EC 1165-2-209), and if warranted, request an IEPR exclusion from the DCW.

A Type II IEPR is not anticipated to be necessary. Major alternatives being considered either concern altering the timing of hydrologic releases from the dam, or various structural measures for improving dissolved oxygen in the releases. None of the alternatives being considered at this time for the study would be expected to pose any significant risk to human life and safety. However, once

an actual selected plan is chosen (after the AFB), the necessity for a Type II IEPR will be revisited, and a risk-informed decision analysis will be made to determine whether one will be conducted. If it is determined a Type II IEPR is needed at that time, this RP will be revised to reflect that.

b. Products to Undergo Type I IEPR. If an IEPR were to be conducted, it would only be on the full draft feasibility report, including all relevant appendices.

c. Required Type I IEPR Panel Expertise. If an IEPR exclusion is not granted for this study, this Review Plan will be updated to reflect the necessary expertise and experience required for the IEPR reviewers.

d. Documentation of Type I IEPR. If the IEPR is not waived, the IEPR panel will be selected and managed by an Outside Eligible Organization (OEO) per EC 1165-2-209, Appendix D. Panel comments will be compiled by the OEO and should address the adequacy and acceptability of the economic, engineering and environmental methods, models, and analyses used. IEPR comments should generally include the same four key parts as described for ATR comments in Section 4.c above. The OEO will prepare a final Review Report that will accompany the publication of the final decision document 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;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions; and
- 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.

The final Review Report will be submitted by the OEO no later than 60 days following the close of the public comment period for the draft decision document. USACE shall consider all recommendations contained in the Review Report and prepare a written response for all recommendations adopted or not adopted. The final decision document will summarize the Review Report and USACE response. The Review Report and USACE response will be made available to the public, including through electronic means on the internet.

6. MODEL CERTIFICATION AND APPROVAL

The Kerr 216 study will utilize multiple models in the analysis of alternative plans. According to EC 1005-2-412 – Model Certification, models can be divided into two general categories – “planning models” and “engineering models used in planning studies”. Currently, only the first category – “planning models” need to go through the planning model certification process.

a. Planning Models. Planning models that are currently being considered for use in the study are US Fish and Wildlife Service Habitat Suitability Index (HSI) models, for the evaluation of in-stream environmental benefits, a Roanoke River Basin habitat model for measuring riparian benefits, and the IWR-Plan software for conducting cost-effective/incremental cost analysis comparisons of alternatives. HSI models have already been approved for use; therefore, it is not anticipated that further certification will be necessary. The HSI models being proposed for use are the ones for Large

Mouth Bass, Walleye, and Channel Catfish. The district will likely combine these three HSI models into a "community based" model, by averaging the scores obtained from each of the individual HSI models. The IWR Plan software is already certified, although its proper application will be reviewed during ATR.

The USACE Engineering Research and Development Center (ERDC) has developed specifically for this project a Roanoke River floodplain habitat assessment model, for the purposes of measuring benefits from any alternatives that may affect the floodplain ecosystem. The model uses referenced based scaling and is similar in principle to Hydrogeomorphic (HGM) models, but focuses on habitat functions only.

The District will coordinate with the ECO-PCX as to the appropriate level of review necessary for the riparian model and the community HEP models, and update the review plan when the level of review is determined. The District will likely seek a study specific "approval for use" for these models, rather than full certification, as it is not anticipated that these models will be used again beyond this study. Additionally, if in the course of the study it is decided that additional models are needed in order to properly assess ecosystem restoration benefits, use of those models will also be coordinated with the ECO-PCX, and the appropriate level of model certification will be pursued for use of those additional models.

b. Engineering Models. The study will use several well established engineering models – EFDC,WASP, CE-QUAL-W2, which have all been categorized as "allowed for use" by the USACE Engineering Community of Practice. Although these engineering models do not need to be certified for use, the proper application of these models to the study is something that will be reviewed during the ATR process (see Engineering and Construction Bulletin No2007-6 – Model Certification Issues for Engineering Software in Planning Studies). Additionally, the study will use another engineering model – the Roanoke River Basin Reservoir Operations Model (RRBROM), which was initially developed for the State of North Carolina in 1995, and has been periodically updated and successfully used since then. RRBROM was built using the OASIS software, which is also in the "allowed for use" category; however, the RRBROM model itself will undergo additional critical review during the normal ATR process.

7. REVIEW SCHEDULES AND COSTS

a. ATR Schedule and Anticipated Cost.
FSM: March 2011, $25k
AFB: Dec 2011, $50k
Draft: August 2012, $10k
Final Report: June 2013, $5k

b. Type I IEPR Schedule and Cost.

If a Type I IEPR exclusion is not granted for this study, it is being scheduled for March 2013. The estimated cost of the IEPR is $150,000.

c. Model Certification/Approval Schedule and Cost.

Review of the Riparian floodplain model and community HSI model that are being proposed for use is scheduled for April 2011. The anticipated cost of this review is $40k.

8. PUBLIC PARTICIPATION

Once completed, the Draft Integrated Feasibility Report will be disseminated to resource agencies, interest groups, and the public as part of the National Environmental Policy Act (NEPA) environmental compliance review. All significant and relevant public comments will be provided as part of the review package to Peer Reviewers as they are available and may include but not be limited to: scoping letters, meeting minutes, other received letters, and emails.

9. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO is responsible for managing the overall peer review effort described in this Review Plan. The RMO for decision documents is typically either a Planning Center of Expertise (PCX) or the Risk Management Center (RMC), depending on the primary purpose of the decision document. The RMO for the peer review effort described in this Review Plan is the Ecosystem Restoration Planning Center of Expertise.

The RMO will coordinate with the Cost Engineering Directory of Expertise (DX) to conduct ATR of cost estimates, construction schedules and contingencies

10. REVIEW PLAN APPROVAL AND UPDATES

The South Atlantic Division Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input (involving district, MSC, RMO, and HQUSACE members) as to the appropriate scope and level of review for the decision document. Like the PMP, the Review Plan is a living document and may change as the study progresses. The home district is responsible for keeping the Review Plan up to date. Minor changes to the review plan since the last MSC Commander approval will be documented in an attachment. Significant changes to the Review Plan (such as changes to the scope and/or level of review) should be re-approved by the MSC Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commanders' approval memorandum, should be posted on the Home District's webpage. The latest Review Plan should also be provided to the RMO and home MSC.

11. REVIEW PLAN POINTS OF CONTACT

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

<u>District Contact:</u>

Project Manager
US Army Corps of Engineers – Wilmington District
CESAW-PM-C
69 Darlington Avenue
Wilmington, North Carolina 28403

Phone: (910) 251-4742 **Fax:** (910) 251-4965

ECO-PCX Contact:

National Ecosystem Planning Center of Expertise
US Army Corps of Engineers – Mississippi Valley Division
CEMVD-RB-T
Clock Tower Building
Rock Island, IL 61204
Phone: (309) 794-5448

ATTACHMENT 1: ATR ROSTER

Plan Formulation – Reviewer is a civil works water resources planner in the Tulsa District's Planning and Environmental Division. He coordinates the efforts of multidisciplinary teams in the evaluation of problems such as flooding, ecosystem degradation, and water shortages. He oversees the development of decision documents used by Congress to authorize the implementation of civil works projects. To develop those reports he leads study teams in the evaluation of problems and needs, selection of alternative evaluation methodologies, the analysis of findings of a multidisciplinary team that lead to conclusions and recommendations, and oversight of overall team documentation.

As a senior plan formulation specialist and regional technical specialist, he also provides regional support for Little Rock, Galveston, and Fort Worth Districts. In this capacity he assists in the development of unique or complex formulation and analysis techniques within the framework of Corps of Engineers guidance; Federal, state, and local laws and regulations; and stakeholder interests. In a similar capacity, he leads and participates in independent technical review teams to analyze studies conducted by Districts across the country related to flood risk management, water management and reallocation, ecosystem restoration, levee and dam safety, and navigation. In February 2010 he was selected as the Southwestern Division Regional Manager to assist the FRM PCX National Manager. He has worked in hydrology, design, and civil works planning offices within the Tulsa District and has completed a wide variety of water resources studies in Kansas, Oklahoma, and Texas. Studies include the evaluation of hydropower expansion on the McClellan-Kerr Navigation system; a system of 122 small reservoirs in the Grand-Neosho Basin; chloride control evaluations in the Arkansas and Red River Basins; multiple purpose reservoirs system formulation; storage reallocation studies (involving hydropower, water supply, recreation, and flood control purposes), regional needs studies; watershed ecosystem restoration evaluations; and several local levee, channel, detention, buyout plans.

Water Management and Reallocation – Reviewer is the Southwestern Division Water Supply Specialist supporting the Corps of Engineers Center of Expertise for Water Management and Reallocations and has 22 years experience in the Tulsa District. She serves as a National Water Supply Expert assisting Districts, Divisions, and the Institute for Water Resources as needed. Within the Tulsa District she is directly responsible for the development and oversight of 145 water supply agreements at 29 projects located in Kansas, Oklahoma, and Texas. These projects include over 2.2 million acre-feet of water supply storage. She has completed 14 reallocation studies and has served on 11 ATR teams. Ahe is a graduate of Tulsa District's Leadership Development Program, Mission Manager for the Tulsa District's Emergency Power Response Team, Water Supply Business Line Manager, National Water Supply Business Line Team Member, Regional Water Supply Expert for the Water Management and Reallocation Center of Expertise located in the Southwestern Division, completed a developmental assignment in HQUSACE, Planning and Policy Division assisting with the review of water storage reallocation reports, cost allocation reports, and water storage agreements.

Hydrology and Hydraulics – Reviewer graduated from Oklahoma State University in 1986 with a Bachelor of Science degree in Agricultural Engineering. He is a Registered Professional Engineer in the state of Oklahoma. He has worked for the U.S. Army Corps of Engineers for 23 years in the Tulsa District office. He currently serves as the Lead Hydraulic Design Engineer for Tulsa District in the areas of flood modeling and flood control structure design as well as Dam and Levee Safety. He has also integrated detailed terrain analysis and GIS (Geographic Information System) applications as part of the modeling process. He serves on a National Dam Safety Evaluation Team and has conducted several Risk Based Analyses in the field of Hydrology and Hydraulics. Current work includes modeling of dam break scenarios on multiple structures nationwide as well as levee certification modeling, all based on risk analysis framework.

Economics – Reviewer has 20 years of experience as an economist and planner with the Corps of Engineers. He is presently a regional economist with the Galveston District. He previously worked as a senior economist/planner at the Institute for Water Resources and was chief of the economics section in the Alaska District from 2002-2006. Prior to those assignments, he was a regional economist with the Little Rock District. While at IWR, he worked with a team to develop and implement risk-informed planning processes, with a particular focus on flood risk management and coastal storm damage reduction. In Alaska his work included extensive involvement in small boat harbor and flood & coastal storm damage evaluations. In the Little Rock District he conducted planning studies and economic evaluations across multiple Corps missions. He introduced risk analysis techniques into the District's evaluations of three hydropower projects in the mid-90's and served on the SWD regional technical team for hydropower rehab studies. Brian also incorporated risk & uncertainty analyses into flood damage reduction studies and completed many water supply reallocation, inland navigation, agricultural flood damage, and stream-bank erosion studies. He started his Corps career as a Dept of the Army intern with the Los Angeles District from 1989-1991.

Environmental – Sandra Stiles, CEMVD - Reviewer is a Biologist in New Orleans District Environmental Planning & Compliance Branch, Ecological Planning and Restoration Section. She has approximately 25 years of service with the Corps in the environmental arena.

Reviewer has extensive experience in the preparation of NEPA documents for water resource, hurricane protection and ecosystem restoration projects. Current assignments include the environmental management of the MRGO Ecosystem Restoration Study EIS, Southwest Coastal Restoration Study EIS, Louisiana Coastal Protection and Restoration, Coastal Restoration Report, Violet Freshwater Division EIS and the Calcasieu DMMP/SEIS.

Economics/Hydropower – Reviewer is the Technical Manager for the Hydropower Analysis Center, which is the Corps Planning Center of Expertise for Hydropower. He coordinates the efforts of a multidisciplinary team in the evaluation of hydropower impacts associated with reallocations, rehabilitations, and other changes to hydropower production.

He has worked in Economics Section within the Portland District from 1989 to 2007 and has completed a wide variety of water resources studies. Studies include the evaluation of the Columbia River Channel Improvement Project, the John Day Drawdown Study, the Lower Snake Drawdown Study, the major rehabilitation reports for many hydropower projects across the nation.