DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
Washington, D.C. 20314-1000

CECW-CP

EC 1105-2-410

Circular
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Water Resources Policies and Authorities
REVIEW OF DECISION DOCUMENTS

1. Purpose. This Circular provides the procedures for ensuring the quality and credibility of U.S. Army Corps of Engineers (USACE) decision documents through an independent review process. It complies with Section 515 of Public Law 106-554 (referred to as the "Information Quality Act"); and the Final Information Quality Bulletin for Peer Review by the Office of Management and Budget (referred to as the "OMB Peer Review Bulletin"). It also provides guidance for the implementation of Section 2034 of WRDA 2007 (P.L. 110-114). This Circular presents a framework for establishing the appropriate level and independence of review and detailed requirements for review documentation and dissemination.

2. Applicability. This Circular applies to all feasibility studies (as defined in ER 1105-2-100, paragraph 4-l), reevaluation studies and reports associated with modification of projects that include environmental impact statements and any other project studies that lead to decision documents that require a report of the Chief of Engineers or authorization by the U.S. Congress or require an Environmental Impact Statement (EIS) to be prepared. All projects addressing flooding or storm damage reduction also will be required to undergo a safety assurance review during design and construction (Section 2035 of WRDA 2007 guidance is under development). Therefore, the safety assurance factors must be considered in all reviews for those studies. Unless accompanied by an EIS, projects developed as Continuing Authority Projects (CAP) are not subject to the IEPR requirements of this Circular and should follow the requirements of Appendix F of ER 1105-2-100. (In future guidance, it is expected that those CAP projects that address flooding or storm damage reduction purposes will require a safety assurance review during design and construction.)

3. Distribution Statement. Approved for public release; distribution is unlimited.

4. References. References are at Appendix A.

5. Background.

a. The U. S. Army Corps of Engineers review processes are essential to ensuring project safety and quality of the products USACE provides to the American people. USACE has an effective review process for planning and engineering products that must be strengthened. The National Research Council (NRC) 2002 report, *Review Procedures for Water Resources Project Planning*; the 2008 report, *Decision-Making Chronology for the Lake Pontchartrain & Vicinity Hurricane Protection Project;* and the Interagency Performance Evaluation Taskforce 2008

report, *Performance Evaluation of the New Orleans and Southeast Louisiana Hurricane Protection System* clearly show the importance of external peer review in improving USACE plans, projects and programs.

b. USACE implemented a comprehensive peer review process in May of 2005 with the publication of EC 1105-2-408 "Peer Review of Decision Documents" that established a thoughtful, balanced peer review process. That EC adopted most of the NRC recommendations and implemented the Office of Management Budget (OMB) guidelines on peer review. It required that peer review approaches be customized for each effort. Depending on the particular circumstances, reviews were to be conducted entirely within USACE, entirely by external panels, or in various combinations.

c. Provisions in the Water Resources Development Act of 2007 (Sections 2034 and 2035) reinforce and add further definition to the USACE review processes. This circular, in addition to implementing Section 2034 of WRDA 2007, is the first in a series of revisions to USACE guidance to institute a comprehensive life-cycle review strategy for Civil Works products. It will be followed by additional guidance that will ultimately result in seamless guidance for peer review of all Civil Works projects from initial planning through design, construction, sponsor Operation, Maintenance, Repair, Replacement and Rehabilitation (OMRRR). USACE is adopting and will continue to strengthen this more open and vigorous peer review process.

d. This process will be based on a few simple but fundamental principles:

(1) An extra set of eyes is beneficial. Reviews have significantly contributed to improved quality of work & planning of future projects;

(2) Peer review will be scalable, deliberate, life cycle and concurrent with normal business processes;

(3) An agency review will be completed on all products, and performed outside the "home" district;

(4) National Academy of Science (NAS) sets the standard for "independence" in review process and complexity in a national context;

(5) Consistent CW review policy for all work products; and,

(6) The USACE goal is always to provide the most scientifically sound, sustainable water resource solutions for the U.S.

e. The purpose of the Independent External Peer Review panels is to provide the Chief of Engineers with an independent assessment of the project or work product, including the panel's assessment of the adequacy and acceptability of the economic, engineering, and environmental methods, models, data, and analyses used as well as the range of alternatives, and the adequacy of risk and uncertainty analyses. The Chief of Engineers will consider recommendations from

the panel, prepare a written response to those recommendations, and publish and disseminate that information, as required by law.

6. Policy.

a. The U. S. Army Corps of Engineers review processes are essential to ensuring project safety and the quality of the work products provided to the American people. It is the policy of USACE that all of its technical, engineering and scientific work will undergo an open, dynamic and vigorous review process. Scientific and engineering information that is relied upon to support recommendations in decision documents and that is to be disseminated to the public will be reviewed to ensure technical quality. Review approaches will be customized for each effort, commensurate with the level of complexity and relative importance of the actions being supported. Depending on the particular circumstances, reviews may be managed entirely within USACE or in various combinations with external parties. In cases requiring the most independence, the management of the review will be done by an organization other than USACE and involve independent experts. Commanders must be actively involved in establishing effective review approaches for all study reports. The quality management procedures of each major subordinate command shall comply with the principles of this Circular.

b. All decision documents and their supporting analyses will undergo District Quality Control (DQC) and Agency Technical Review (ATR) (described in paragraph 7 below) and may also require IEPR, to "ensure the quality and credibility of the government's scientific information", in accordance with this circular and the quality management procedures of the responsible command. These decision documents include feasibility reports, reevaluation reports, major rehabilitation reports, dredged material management plans, dam safety modification reports, design deficiency reports, studies prepared by local sponsors (Sections 203, 204 of WRDA 1986 and 211 of WRDA 1996). Evaluations of Federal project modifications under 33 USC 408 will be the subject of separate guidance. Also included are reports requiring action by the ASA (CW), such as reports authorizing projects subject to a determination by the Assistant Secretary of the Army (Civil Works) (ASA (CW)) of economic justification, environmental acceptability, and technical feasibility. Additionally, large programmatic efforts and their component projects are included and must undergo DQC and ATR, and are also subject to consideration for IEPR at either the programmatic level, the project component level, or both. National Environmental Policy Act (NEPA) documents and other environmental compliance products associated with the above work products are to be included in the IEPR. Other similar work products and decision documents not listed here must also undergo DQC and ATR. The requirements herein apply at all levels of approval authority including when that authority has been delegated (see ER 1165-2-502). The extent of review should be commensurate with the significance of the information being reviewed. See Appendices B and C for further discussion.

c. In cases where there are public safety concerns, a high level of complexity, novel or precedent-setting approaches; where the project is controversial, has significant interagency interest, has a total project cost greater than $45 million, or has significant economic, environmental and social effects to the nation, or where requested by the Governor of an affected state, IEPR will be conducted. External panels will conduct reviews concurrent with the product development that covers the entire project. See Appendix D for further discussion of panels. The requirement to perform IEPR is based upon factors in Section 2034 of WRDA 2007, the

OMB Peer Review Bulletin and other USACE policy considerations. Factors including "significant threat to human life", project cost thresholds and other factors further defined in paragraph 6c and in the appendices will be used in determining the need for IEPR.

d. The decision to conduct IEPR rests with the MSC Commander. In limited cases the Chief of Engineers may waive the requirement for IEPR. The vertical team (involving district, major subordinate command, planning centers of expertise (PCX) and Headquarters members) will advise the Commander as to whether IEPR is appropriate or whether sufficient rationale exists to support a waiver request to the Chief of Engineers. See Appendix D for further discussion.

7. Types of Review. The types of technical review are provided below and have been redefined and renamed for consistency with recent legislation and to establish a more comprehensive lexicon. This Circular uses the terms "home district" or "home MSC" to refer to the office that has been assigned responsibility for a study or project and whose commander will sign any recommendations or decision document. Where studies are conducted by non-Federal interests, the "home district" will be the district which has the area of responsibility that contains the proposed project.

a. District Quality Control (DQC). DQC is the review of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). It is managed in the home district and may be conducted by staff in the home district as long as they are not doing the work involved in the study, including contracted work that is being reviewed. Basic quality control tools include a Quality Management Plan providing for seamless review, quality checks and reviews, supervisory reviews, Project Delivery Team (PDT) reviews, etc. Additionally, the PDT is responsible for a complete reading of the report to assure the overall integrity of the report, technical appendices and the recommendations before approval by the District Commander. It is expected that the MSC/District quality management plans address the conduct and documentation of this fundamental level of review.

b. Agency Technical Review (ATR). ATR (which replaces the level of review formerly known as Independent Technical Review [ITR]) is an in-depth review, managed within USACE, and conducted by a qualified team outside of the home district that is not involved in the day-to-day production of a project/product. The purpose of this review is to ensure the proper application of clearly established criteria, regulations, laws, codes, principles and professional practices. The ATR team review the various work products and assure that all the parts fit together in a coherent whole. ATR teams will be comprised of senior USACE personnel (Regional Technical Specialists (RTS), etc.), 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.

c. Independent External Peer Review (IEPR). This 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. IEPR is generally for feasibility and reevaluation studies and modification reports with EISs. IEPR is managed by an outside eligible organization (OEO) that is described in Internal Revenue Code Section 501(c) (3), is exempt from Federal tax under section 501(a), of the Internal Revenue Code of 1986; is independent; is free from conflicts of interest; does not carry out or

advocate for or against Federal water resources projects; and has experience in establishing and administering IEPR panels. The scope of review will address all the underlying planning, engineering, including safety assurance, economics, and environmental analyses performed, not just one aspect of the project.

d. Policy and Legal Compliance Reviews. In addition to the technical reviews described above, decision documents will be reviewed throughout the study process for their compliance with law and policy. These reviews culminate in Washington-level 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. Guidance for policy and legal compliance reviews is addressed further in Appendix H, ER 1105-2-100. The technical review efforts addressed in this Circular are to augment and complement the policy review processes by addressing compliance with published Army policies pertinent to planning products, particularly policies on analytical methods and the presentation of findings in decision documents. DQC and ATR efforts are to include the necessary expertise to address compliance with published planning policy. Counsel will generally not participate on ATR teams, but may at the discretion of the district or as directed by higher authority. When policy and/or legal concerns arise during DQC or ATR efforts that are not readily and mutually resolved by the PDT and the reviewers, the district will seek issue resolution support (see section 8 e.) from the MSC and HQUSACE in accordance with the procedures outlined in Appendix H, ER 1105-2-100. IEPR teams are not expected to be knowledgeable of Army and administration policies, nor are they expected to address such concerns. An IEPR team should be given the flexibility to bring important issues to the attention of decision makers.

8. Conduct of Review

a. The section of the Project Management Plan (PMP) that describes the scope and execution of anticipated review for all levels of review (DQC, ATR and IEPR) is designated as the Review Plan (RP). RPs are stand alone documents required to fulfill the requirements of WRDA 2007 and the Information Quality Act and is complementary with PMP requirements. RPs for feasibility-level decision documents and supporting analyses are to be coordinated with the appropriate Planning Center of Expertise (PCX). The MSC Commander's approval of the RP is required to assure that the plan is in compliance with the principles of this Circular and the MSC Quality Management Plan (ER 5-1-11). The RPs must anticipate and define the appropriate level of review. All reviews (DQC, ATR and IEPR when required) are expected to be completed and documented before the District Commander signs the report. HQUSACE policy review will be completed before the draft decision and NEPA documents are released for public review and again before the Chief of Engineers signs his report (see Appendix H, ER 1105-2-100). To the maximum extent practicable, reviews shall be scheduled and conducted in a manner to avoid or minimize delays in study or project completion. The PMP and RP must identify the review requirements, process, cost and schedule as integrated features of the overall project execution. In developing RPs, USACE is responsible for providing an opportunity for public comment and for considering those comments in deciding the type of review to be carried out. RPs shall be published on the home district's public website. See Appendix C for further discussion of RPs.

b. When preparing to initiate review of a USACE product, the "charge" to the reviewers (both ATR teams and IEPR panels) will contain the instructions regarding the objective of the review and the specific advice sought. Review should be conducted to identify, explain, and comment upon assumptions that underlie public safety, economic, engineering, environmental, and other analyses, as well as to evaluate the soundness of models and analytic methods. Panels should also be able to evaluate whether the interpretations of analyses and conclusions are reasonable. To provide effective review, in terms of both usefulness and credibility of results, reviewers should be given the flexibility to bring important issues to the attention of decision makers. However, reviewers should be instructed to not make a recommendation on whether a particular alternative should be implemented, as the Chief of Engineers is ultimately responsible for the final decision on USACE work products.

c. The management of review is a critical factor in assuring the independence of the various levels of review. In all cases the review must be accomplished by professionals that are at arms length and not associated with development of the work that is being reviewed. DQC reviews are managed and accomplished within the home district. Management of ATR reviews is dependent upon the phase of work and the reviews are conducted by professionals outside of the home district. For planning feasibility-level studies (defined in paragraph 6b), the ATR is managed by the appropriate Planning Center of Expertise (PCX) with appropriate consultation with the allied Communities of Practice such as engineering and real estate. When IEPR is required, the PCX will contract with an appropriate Outside Eligible Organization (OEO) to manage the review.

d. Review Panels. IEPR panels will be made up of recognized independent experts from outside of USACE, with disciplines appropriate for the type of review being conducted. IEPR panel members will be selected by an OEO using the National Academy of Science's policy for selecting reviewers. Although the National Academies of Science (NAS) reviews are frequently cited for the type of IEPR process USACE should follow, actual NAS reviews are expected to be rare. Decisions to request NAS for IEPR must be made by HQUSACE (CECW-CP). See Appendix D for further discussion of panels.

e. Issue Resolution. The ATR teams and PDTs will make every effort to resolve the ATR review concerns in a timely manner. PDTs should engage district subject matter experts (SMEs) and functional chiefs, and regional SMEs as needed to help resolve issues. The ATR team is responsible for the final assessment of whether each concern is or is not adequately resolved. In general, irresolvable concerns should be the exception and not the norm, and may be viewed as signs of broader QA/QC problems. The ATR team will accurately document the final disposition of each review concern, which may include stating the inability to resolve the concern, before they certify the review. The certification should note, and reference the location of, any unresolved concerns in the review documentation. The procedures further defined in Appendix C, paragraph 3 will be used for issue resolution.

f. Exclusion from IEPR. In keeping with the principle that IEPR should be scalable to the work product being reviewed, there may be studies that warrant exclusion from the IEPR process. The processes for justifying and seeking such exclusions are in Appendix D. The Chief of Engineers may exclude a project study from IEPR:

(1) if the project study does not include an environmental impact statement; and

(a) is not controversial;

(b) has no more than negligible adverse impacts on scarce or unique cultural, historic, or tribal resources;

(c) has no substantial adverse impacts on fish and wildlife species and their habitat prior to the implementation of mitigation measures; and

(d) has, before implementation of mitigation measures, no more than a negligible adverse impact on a species listed as endangered or threatened species under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) or the critical habitat of such species designated under such Act; or

(2) if the project study

(a) involves only the rehabilitation or replacement of existing hydropower turbines, lock structures, or flood control gates within the same footprint and for the same purpose as an existing water resources project;

(b) is for an activity for which there is ample experience within USACE and industry to treat the activity as being routine; and

(c) has minimal life safety risk; or

(3) if the project study is pursued under the Continuing Authorities Program (see Appendix F of ER 1105-2-100) and does not include an environmental impact statement.

g. Documentation and Response

(1) DrChecks[sm] will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. For IEPR, DrChecks[sm] will be used to document comments and aid in the preparation of the Review Report (see Appendix D). MSC and district Quality Management Plans will establish procedures for documenting DQC review. DrChecks[sm] will be the official system for the continuity of the review record.

(2) Publishing comments and responses to IEPR. The preparing district, with assistance from the PCX, shall prepare a written proposed response to the IEPR Review Report, whether the views expressed in the report are adopted or not adopted, the actions undertaken or to be undertaken in response to the report, and the reasons those actions are believed to satisfy the key concerns stated in the report (if applicable). The proposed response will be coordinated with the MSC District Support Teams and HQUSACE to ensure consistency with law, policy, project guidance, ongoing policy and legal compliance review, and other USACE or National considerations. The IEPR comments and responses will be discussed at the Civil Works Review Board (CWRB) with an IEPR panel or OEO representative in attendance. Upon satisfying its concerns, HQUSACE will determine the appropriate command level for issuing the formal

USACE response to the IEPR Review Report. When USACE response is issued, the district shall disseminate the final IEPR Review Report, USACE response, and all other materials related to the review on its website, and include them in the applicable decision document. Chief of Engineers' reports for decision documents that undergo IEPR shall summarize the IEPR Review Report and USACE responses. This documentation will become a critical part of the review record and will be addressed in recommendations made by the Chief of Engineers.

9. Administration.

a. Federal Advisory Committee Act (FACA). Under WRDA 2007 Section 2034, the Federal Advisory Committee Act (FACA) does not apply to IEPR panels established in accordance with this circular.

b. Judicial Review. This Circular is intended to improve the internal management of the USACE Civil Works Program, and is not intended to, and does not create any right or benefit, substantive or procedural, enforceable at law or in equity, against the United States, its agencies or other entities, its officers or employees, or any other person.

c. This Circular also does not apply to information that is:

(1) Related to certain national security, foreign affairs, or negotiations involving international trade or treaties where compliance with this Circular would interfere with the need for secrecy or promptness.

(2) Disseminated in the course of an individual agency adjudication or permit proceeding (including a registration, approval, licensing, site-specific determination), unless USACE determines that review is practical and appropriate and that the influential dissemination is scientifically or technically novel or likely to have precedent setting influence on future adjudications and/or permit proceedings.

(3) A health or safety dissemination where USACE determines that the dissemination is time-sensitive.

(4) A USACE regulatory impact analysis or regulatory flexibility analysis subject to interagency review under Executive Order 12866, except for underlying data and analytical models used.

(5) Routine statistical information released by Federal statistical agencies (e.g., periodic demographic and economic statistics) and analyses of these data to compute standard indicators and trends (e.g., unemployment and poverty rates).

(6) Accounting, budget, actuarial, and financial information, including that which is generated or used by agencies that focus on interest rates, banking, currency, securities, commodities, futures, or taxes.

(7) Information disseminated in connection with routine rules that materially alter entitlements, grants, user fees, or loan programs, or the rights and obligations of recipients thereof.

(8) Responses to letters of inquiry, responses to FOIA requests, and internal disseminations.

10. Implementation.

a. Decision Documents. This Circular continues and modifies guidance previously issued on this subject. This guidance is effective immediately and shall be applied to all documents and supporting studies described in paragraph 2, except for complete final decision document packages that were submitted to the appropriate approval level before the date of this Circular. Appendix H of ER 1105-2-100 provides guidance on processing.

b. Panel Costs.

(1) The costs of a panel of experts for IEPR shall be a Federal expense born by the project; and shall not exceed $500,000. The Chief of Engineers may waive the $500,000 limitation if deemed appropriate.

(2) For those IEPR panels that have been contracted prior to 8 November 2007 and whose costs were cost shared under Sec 105 (a) of WRDA 1986 will remain cost shared.

(3) For those panels where contracts have been or will be executed on or after 8 November 2007, the costs of the panel(s) established for IEPR for those studies identified under paragraph 5b will be a Federal expense and will not exceed $500,000 unless the Chief of Engineers determines that a higher cost may be appropriate in a specific case.

(4) For studies conducted by non-Federal interests IEPR costs will initially be born by the non-Federal sponsor. If the project is implemented at some later date these costs may be eligible for reimbursement, subject to the cost limits in 10 b(1) above.

(5) Normal budgetary procedures will be used to seek funds where IEPR funds have not been appropriated. Starting in FY 2010, the costs for any anticipated IEPR will be requested by study (or project) as part of the normal budget development process.

FOR THE COMMANDER:

ALEX C. DORNSTAUDER
Colonel, Corps of Engineers
Executive Director of Civil Works

5 Appendices
Appendix A – References
Appendix B – Review Plans
Appendix C – DQC and ATR
Appendix D – Independent External Peer Review
Appendix E - List of Acronyms

APPENDIX A

References

a. Section 515 of the Treasury and General Government Appropriations Act of 2001 (Public Law 106-554; often called The Information Quality Act).

b. Section 2034 of Water Resources Development Act of 2007 (P.L. 110-114) - Sections 2034 & 2035

c. Privacy Act, 5 U.S.C. § 522a as amended

d. Executive Order 12866. (Regulatory Planning and Review)

e. OMB Circular A-130, Appendix I, 61 Federal Register 6428 (February 20, 1996)

f. Office of Management and Budget. 2004. Final Information Quality Bulletin for Peer Review, (http://www.whitehouse.gov/omb/inforeg/peer2004/peer_bulletin.pdf).

g. ER 5-1-11 - Management - U.S. Army Corps of Engineers Business Process.

h. ER 1105-2-100 - Planning Guidance Notebook. (http://www.usace.armv.mil/inet/usace-docs/eng-regs/erll05-2-100/toc.htm).

i. ER 1110-1-12, Quality Management

j. ER 1110-2-1150, Engineering and Design for Civil Works Projects

k. ER 1165-2-502, Delegation of Review and Approval Authority for Post-Authorization Decision Documents.

l. National Research Council. 2002. Review Procedures for Water Resources Project Planning. Washington, DC. http://www.nap.edu/books/030908508X/html

m. EIG Inspection Report on Quality Management for Civil Works Planning, 31 March 2004.

n. Recommendations for Independent Science Review, Submitted by the Environmental Advisory Board to the Chief, U.S. Army Corps of Engineers. 13 May 2004. http://www.usace.army.mil/cw/hot_topics/ht_2004/isrr.pdf

o. U.S. Environmental Protection Agency. 2006. Peer Review Handbook, 3rd Edition. Washington, DC. http://www.epa.gov/peerreview/pdfs/Peer%20Review%20HandbookMay06.pdf

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APPENDIX B

Review Plans

1. Applicability. Each project or activity covered by this Circular shall have a Review Plan (RP) created as a component of the Quality Management Plan (QMP) in the Project Management Plan (PMP).

2. Responsibilities. The development of the RP is the responsibility of the Project Delivery Team (PDT) in concert with the PCX (http://www.usace.army.mil/cw/cecw-cp/pcx/plan_cx.html). The PDT is responsible for recommending the necessary type(s) of reviews as well as the particular disciplines / expertise required. The Review Plan will be published on the district's public internet site following approval by the MSC.

3. Development of Review Plans.

a. In developing RPs, USACE is responsible for providing an opportunity for public comments and for considering those comments in the decision of the type of review to be carried out. Review Plans must be detailed enough to assess the necessary level and focus of review – which parts of the study will likely be challenging, which models and data are proposed, model certification needs, etc. RPs must anticipate and define the appropriate level of review from the very start of the effort based upon a preliminary assessment of where project risks are most likely to occur and the magnitude of what this risk might be.

b. A RP shall be developed prior to the completion of the Feasibility Cost Sharing Agreement (FCSA). The RP shall be prepared by the district or other USACE office responsible for the project, in coordination with the appropriate PCX and approved by the respective MSC.

4. Content of Review Plans

a. A paragraph including the project title, subject and purpose of the decision document, discipline/area of expertise of reviewers and designated points of contact in the home district and PCX to whom inquiries about the plan may be directed.

b. Indicate if the report is likely to contain influential scientific information or be a highly influential scientific assessment and what level of review (ATR only or with IEPR) is proposed.

c. The timing and sequence of the reviews (including deferrals).

d. How and when there will be opportunities for the public to comment on the decision document to be reviewed.

e. When significant and relevant public comments will be provided to the reviewers before they conduct their review.

f. The anticipated number of reviewers.

g. A succinct description of the primary disciplines or expertise needed in the review.

h. Whether the public, including scientific or professional societies, will be asked to nominate potential reviewers.

i. A list of the models expected to be used in developing recommendations, and the model certification / acceptance status of those models.

j. A list of expected in-kind contributions to be provided by the sponsor.

k. The Review Plan shall also contain an execution plan that explains how the reviews will be accomplished. The following are factors that must be considered in developing the Review Plan and selecting reviewers:

(1) Reviewers' Expertise and Balance. Subject matter experts from within USACE or outside USACE may conduct ATR. ATR reviewers shall be selected by the PCX and IEPR reviewers by the OEO based on expertise, experience, and skills, including specialists from multiple disciplines as necessary to ensure comprehensive review. The group of qualified reviewers shall be formed into panels that are sufficiently broad and diverse to fairly represent the relevant scientific and engineering perspectives and fields of knowledge.

(2) Reviewers' Rotation. PCX shall avoid repeated use of the same reviewer on multiple studies or reports unless essential and comparable expertise cannot be obtained elsewhere.

(3) Reviewers' Conflicts. PCX shall ensure that reviewers serving as Federal employees (including special government employees) comply with applicable Federal ethics requirements. In selecting reviewers who are not Federal government employees, PCX shall adopt or adapt the National Academy of Sciences' policy for committee selection with respect to evaluating the potential for conflicts (e.g., those arising from investments; agency, employer, and business affiliations; grants, contracts and consulting income).

(4) Reviewers' Independence. IEPR must be performed by subject matter experts from outside of USACE. Peer reviewers shall not have participated in development of the report, appendix, or other work product to be reviewed. PCXs are encouraged to rotate membership on standing panels across the pool of qualified reviewers. OEOs shall bar participation of scientists employed by USACE.

(5) Reviewers' Privacy. Peer reviewers will be advised whether information about them (name, credentials, and affiliation) will be disclosed. The PCX shall comply with the requirements of the Privacy Act. Also see 13 (b).

(6) Reviewers' Compensation. Reviewers will be paid labor and any necessary travel and per diem expenses in accord with their contract with the OEO

(7) Reviewers' Charge. The PCX will prepare the charge to the reviewers. Reviewers shall be charged with reviewing scientific and technical matters, leaving policy determinations for USACE and the Army. The charge will include instructions regarding the review and the specific advice sought. The charge should specify the structure of the review comments to fully communicate the reviewer's intent by including: the comment, why it's important, any potential consequences of failure to address, and suggestions on how to

address the comment. It should include specific technical questions while also directing reviewers to offer a broad evaluation of the overall document. The charge should be determined in advance of the selection of the reviewers.

(8) Confidentiality. Review shall be conducted in a manner that respects confidential business information and intellectual property.

(9) Choice of Review Mechanism. The choice of a review mechanism (including the make-up of the review panel and the number of external reviewers) shall be based on the novelty and complexity of the information to be reviewed, the importance of the information to decision making, the extent of prior review, and the expected benefits and costs of review, as well as the factors regarding transparency described below. When IEPR is selected for planning studies, the PCX must commission eligible entities to manage the review process, including the selection of reviewers, in accordance with this Circular.

(10) Reviewers' Access to Information. PCX shall provide reviewers with sufficient information, including background information about key studies or models, to enable them to understand the data, analytic procedures, and assumptions used to support the key findings or conclusions. Reviewers shall be informed of applicable access, objectivity, reproducibility and other quality standards under the federal laws governing information access and quality.

(11) Disclaimer. Information distributed for review must include the following disclaimer: "This information is distributed solely for the purpose of pre-dissemination review under applicable information quality guidelines. It has not been formally disseminated by USACE. It does not represent and should not be construed to represent any agency determination or policy."

(12) Opportunity for Public Participation. Whenever feasible and appropriate, the office producing the document shall make the draft decision document available to the public for comment at the same time it is submitted for review (or during the review process) and sponsor a public meeting where oral presentations on scientific issues can be made to the reviewers by interested members of the public. When employing a public comment process, the PCX shall, whenever practical, provide reviewers with access to public comments that address significant scientific or technical issues. To ensure that public participation does not unduly delay USACE activities, the PCX shall clearly specify time limits for public participation throughout the review process.

(13) Transparency.

(a) The PCX shall notify reviewers in advance regarding the extent of disclosure and attribution planned by USACE.

(b) The PCX shall instruct the ATR leader or the OEO to prepare a Review Report that 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.
- 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.

l. The RP will also document how written responses to the Review Report will be prepared to explain the agreement or disagreement with the views expressed in the report, the actions undertaken or to be undertaken in response to the report, and the reasons those actions are believed to satisfy the key concerns stated in the report (if applicable). The plan will detail how the PCX shall disseminate the final Review Report, USACE response, and all other materials related to the review on its website, and include them in the applicable decision document. Chief of Engineers' reports for decision documents that undergo review shall summarize the Review Report and USACE responses by the Chief of Engineers.

5. Posting Review Plans.

a. Review Plans will be posted on the home district's public website. In posted documents, lists of the names of USACE reviewers may be displayed. PCX, MSC and HQ postings will link to the district's site. Each district shall establish a mechanism on their web site for allowing the public to comment on the adequacy of the Review Plans, and shall consider public comments on Review Plans. Each MSC shall post on its website, and update at least every three months, an agenda of Review Plans. The agenda shall describe all decision documents covered by this Circular, describe the Review Plan for each entry on the agenda, and provide a link from the agenda to each document that has been made public pursuant to this Circular. MSCs are encouraged to offer electronic notification mechanisms to alert interested members of the public when entries are added or updated.

b. CECW-CP will establish and maintain a web site that lists all the Review Plans and provides links to the appropriate MSC and PCX. Each district will maintain a web site that lists the current and active list of Review Plans.

6. Approval of the Review Plan.

a. The MSC that oversees the home district is responsible for approving the RP. Each RP must have a MSC approval letter (Illustration X). The approval of each RP should be signed by the MSC Commander. If there is disagreement over the scope, content or other aspects of the Review Plan, the MSC should coordinate resolution between the district and the PCX. The commander's approval should reflect vertical team input (involving district, MSC, PCX and Headquarters members) whether the covered subject matter (including data, use of models, assumptions, and other scientific and engineering information) has public safety concerns, is novel, is controversial, is precedent setting, has significant interagency interest, or has significant economic, environmental and social effects to the nation or where specific requests for IEPR are likely.

ILLUSTRATION x

Date:

Subject: Review Plan approval for (study name here)

The attached Review Plan for the (study name here) has been prepared in accordance with EC 1105-2-410.

The Review Plan has been made available for public comment, and the comments received have been incorporated into the Review Plan. The Review Plan has been coordinated with the (PCX name here) of the (MSC) which is the lead office to execute this plan. For further information, contact the PCX at xxx-xxx-xxxx. The Review Plan (includes / does not include) independent external peer review.

I hereby approve this Review Plan, which is subject to change as study 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.

MSC Commander Signature Block

b. Upon MSC approval of each RP, the MSC will provide a copy of the signed MSC Approval Memo to its respective HQUSACE RIT.

c. Like any aspect of a PMP, the RP is a living document and may change as the study progresses. Changes to a RP should be approved by following the process used for initially approving a RP. In all cases the MSCs will review the decision on the level of review, and any changes made in updates to the project.

d. Updated RPs, to outline the scope, timing and level of reviews, will be prepared for the Pre-construction Engineering and Design (PED) and Construction Phases prior to completion of the Feasibility report and presented by the MSC Commander at the CWRB.

APPENDIX C

District Quality Control and Agency Technical Review

1. All Civil Works work products will undergo DQC and ATR to ensure the quality and credibility of the government's scientific information in accordance with this circular and the quality management procedures of the responsible command. The level of review should be commensurate with the significance of the information being reviewed.

2. DQC – Quality control of products and services consists of a number of processes and procedures to ensure quality products are realized. Basic quality control tools include a Quality Management Plan providing for seamless review, quality checks and reviews, supervisory reviews, PDT reviews, etc.

3. ATR for all studies and reports cited in paragraph 2, Applicability, in the main document.

a. Purpose. The purpose of agency reviews in the planning phase, including ATR, policy compliance and legal reviews, generally is to ensure that the appropriate problems and opportunities are addressed; confirm that appropriate solutions are considered; confirm that the appropriate solution is recommended; assure that accurate cost, scheduling and associated risks are presented; confirm that the recommended solution warrants USACE participation; is in accord with current policies; can be implemented in accordance with environmental laws and statutes; and has a sponsor willing and able to fulfill the non-Federal responsibilities; and ensure that the decision document appropriately represents the views of the Corps of Engineers, the Army, and the President.

b. Definition of Success. The corporate intent is for an ATR to not only ensure technical analyses are correct, but to also ensure compliance with all pertinent USACE guidance in order to achieve adequate quality early in studies and help shift HQUSACE policy compliance review to a more confirmatory role and a less confrontational, less corrective role. The scope, extent and type of subsequent HQUSACE policy compliance review comments may be considered a measure of the effectiveness of the PDT and ATR efforts.

c. Supporting Principles.

(1) Each reporting officer is responsible for assuring that the decision document complies with all applicable statutory and policy guidance prior to forwarding the document to higher authority.

(2) The PDT is responsible for project success and for delivering a quality product in accordance with ER 5-1-11. The PDT is responsible for developing documents in accordance with the procedures and policies set forth in USACE engineering regulations and circulars.

(3) The PDT, supported by the district Communities of Practice, is knowledgeable of USACE water resources policies and procedures.

(4) Home district Office of Counsel is responsible for the legal review of each decision document and signing a certification of legal sufficiency.

(5) MSC Commanders are responsible for ensuring policy and legal compliance, and documenting technical, policy and legal compliance for decision documents that have been delegated to MSCs for review and approval in accordance with ER 1165-2-502.

(6) At the Civil Works Review Board briefing, the District Commander will address the review, including the major concerns expressed and how they were resolved. The MSC Commander will present the certifications of technical, legal and policy compliance, and any MSC quality assurance observations. The MSC Commander will summarize the field QA/QC efforts, specifically the certifications of technical, legal and policy compliance. They should discuss the review process and results, including the involvement of the Planning Centers of Expertise, IEPR team, and any significant and/or unresolved technical, legal or policy compliance concerns. The leader of the ATR team will participate in the CWRB to address review concerns.

(7) HQUSACE is responsible for confirming the technical, policy and legal compliance of planning products; supporting the resolution of issues requiring HQUSACE, ASA (CW) or OMB decisions; continuously evaluating the overall project development process, including the review and policy compliance processes (including responsibilities delegated to MSCs); and recommending appropriate changes when warranted.

d. Policy

(1) Objective of ATR. The ATR shall ensure that the product is consistent 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.

(2) Scope of ATR.

(a) The ATR will examine the Feasibility Scoping Meeting (FSM) and Alternative Formulation Briefing (AFB) submittal materials, draft and final decision documents, supporting documents, and other supporting analyses to ensure the adequacy of the presented methods, assumptions, criteria, decision factors, applications, and explanations.

(b) Policy compliance is explicitly within the scope of ATR. The corporate intent is for ATR to identify and resolve common policy concerns early and prior to HQUSACE policy compliance reviews. The scope, extent and type of subsequent HQUSACE policy compliance review comments may be considered a measure of the efficacy of the study and ATR efforts.

e. Planning for ATR.

(1) The ATR tasks and related resource, funding and schedule needs will be addressed in the Review Plan before the FCSA is executed. The ATR efforts should be integrated into the report development schedule to avoid and minimize impacts on the schedule as much as possible; and to avoid rework and delays that would likely occur if reviews are deferred to the end of the study. The ATR should be a relatively continuous process with reviews synchronized with the PDT's production of products and supporting analyses.

(2) The PDT will coordinate the RP with the appropriate PCX to ensure that ATR activities are reasonably represented in the PMP, particularly the schedule and resource needs.

f. ATR Team.

(1) The ATR team shall be established shortly after the FCSA is executed and the PDT is established.

(2) The disciplines represented on the ATR team will reflect the significant disciplines involved in the planning effort. Recognizing the key role of plan formulation, evaluation and selection in forming defensible decision documents, ATR teams must have capable plan formulation representation. These disciplines will typically include plan formulation, economics, environmental sciences and engineering disciplines such as hydraulics and hydrology, design, geotechnical and cost estimating. Real estate, operations and other disciplines may be included when appropriate.

g. ATR Timing

(1) Each application of ATR should build upon any and all prior cycles of review for the study. Each ATR review iteration needs to only address incremental changes and additions to documents and analyses addressed in prior ATR reviews, unless the ATR team determines that certain subjects or aspects warrant revisiting due to other changes or a need to adequately understand a larger portion of the product or project.

(2) The scheduling of ATR reviews should be presented as part of the Review Plan. ATR will normally occur during key stages in the planning process and be discussed in: the Feasibility Scoping Meeting (FSM), documentation the Alternative Formulation Briefing (AFB) submittal materials, the draft decision and NEPA documents, and the final decision and NEPA documents. In addition, interim ATR reviews should occur for key technical products, such as hydrology, surveys, investigations, economic and environmental inventories, prior to performing subsequent analyses that depend on these products.

(a) The FSM and AFB materials and supporting analyses warrant ATR because they provide the basis for HQUSACE to determine whether Washington-level agreement with the future without project condition and support for the tentatively selected plan is warranted.

(b) The FSM and AFB submittal materials, draft report and supporting materials merit ATR because they will be released to the public for review and determine the public, stakeholder, state, other agency and other interest group positions on the tentatively selected plan.

(c) The final report and supporting analyses warrant ATR because they will provide the basis for the Chief of Engineers interagency coordination and the Chief's approval or further recommendation to the Secretary of the Army and the Congress, as needed.

(3) All portions of the final report submittal will have undergone ATR, including any recent revisions.

h. Review Criteria for ATR.

(1) Products will be reviewed against published guidance, including Engineering Regulations, Engineering Circulars, Engineering Manuals, Engineering Technical Letters, Engineering Construction Bulletins, Policy Guidance Letters, implementation guidance, project guidance memoranda, and other formal guidance memoranda issued by HQUSACE. Any justified and approved waivers should have been obtained from HQUSACE for any deviations from USACE guidance.

(2) Recognizing that the quality of each decision document has a direct and immediate impact on the credibility of the Corps of Engineers and the Department of the Army, the ATR should address the basic communication aspects of the documents. Quality decision documents allow the public and stakeholders to understand the planning effort and its results, and enable decision makers to reach the same conclusions as the reporting officers. Quality decision documents are not a simple reporting of PDT findings or a record repository of PDT activities.

(3) The main decision document and appendices should form an integrated and consistent product.

(4) As an initial guide, the ATR team should consider the Project Study Issue Checklist in Exhibit H-2, Appendix H, ER 1105-2-100, which includes many of the more frequent and sensitive policy areas encountered in studies.

(5) Other key considerations include:

(a) Are the existing and future without-plan conditions reasonable and appropriate?

(b) Are the planning objectives, constraints and assumptions consistent with the without-plan conditions?

(c) Do the alternative plans provide a reasonably complete array of solutions, make sense relative to the planning objectives and the without-plan conditions, and are they complete, effective, efficient and acceptable?

(d) Are sufficient plans formulated to determine the optimum combination of measures and the optimum scale the selected plan (the National Economic Development (NED), National Ecosystem Restoration (NER) or NED/NER Plan)?

(e) Are the required plans included, such as nonstructural flood risk management plans?

(f) Are alternatives safe, functional, constructible, economical, reasonable and sustainable?

(g) Are calculations and results of analyses essentially correct?

(h) Is the engineering content at a feasibility level-of-detail, and is it sufficiently complete, to provide an adequate basis for the baseline cost estimate (ER 1110-2-1150)?

(i) Are comparable cost estimates used for comparing, screening and selecting alternative plans, and has a reasonable cost estimate been developed for the recommended plan?

(j) Are analyses for the engineering, economic, environmental, real estate and other disciplines fully described, technically correct, and do they comply with established policy requirements and accepted practices within USACE?

(k) Is the appropriate plan selected based on the National Objectives and evaluation criteria expressed in Principles and Guidelines and USACE policy? and

(l) Does the implementation plan have an appropriate division of responsibilities?

i. ATR Comments.

(1) Each review comment should be succinct and enable timely resolution of the concern. Comments should be limited to those that are required to ensure adequacy of the product. The four key parts of a quality review comment normally include:

(a) The review concern – identify the product's information deficiency or incorrect application of policy, guidance, or procedures;

(b) The basis for the concern – cite the appropriate law, ASA (CW)/USACE policy, guidance or procedure that has not been properly followed;

(c) 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

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

(2) In some situations, especially addressing incomplete or unclear information, comments may seek clarification in order to then assess whether further specific concerns may exist. In such situations, the comments generally would defer identifying a probable solution as indicated under dispute resolution below.

(3) ATR comments should generally not include:

(a) Attempts to enforce personal preferences over otherwise acceptable practices, i.e., alternate solutions or analysis methods when the practitioners have already used appropriate methods to develop an adequate solution;

(b) Any other issues that do not add value towards the planning decisions and recommendations, or do not make the recommended plan safe, functional, or more economical.

j. ATR Process.

(1) The ATR process will be conducted using the DrChecks[sm] review software. The ATR team will provide a written summary of its actions and written specific concerns to the PDT.

(2) Upon receipt of the ATR comment memorandum, the PDT will develop responses to the specific concerns and coordinate those responses with the ATR team.

(3) Dispute Resolution. The ATR team will complete its review and provide written comments to the PDT. Thereupon, the PDT will develop and coordinate responses with the ATR team for each comment. The responses and the ensuing discussion are to seek resolution of the ATR concerns to the mutual satisfaction of the PDT and the ATR team. When resolution is not readily achievable, the ATR team should engage the PCX or MSC subject matter experts (SMEs) to help facilitate resolution, and they in turn may choose to engage HQUSACE SMEs. If a specific concern still remains unresolved, the district is to pursue resolution through the policy issue resolution process described in Appendix H, ER 1105-2-100. HQUSACE may choose to defer the issue to the policy compliance review process or address it directly. The ATR documentation will include the text of each ATR comment, the PDT response, a brief summary of the pertinent points in the ensuing discussion, including any vertical coordination, and the agreed upon resolution. The ATR shall be certified in accordance with ER 1110-1-12 when all ATR concerns are documented as either resolved or deferred by HQUSACE to a separate process.

(4) The Agency Technical Review team will identify significant issues that they believe are not satisfactorily resolved and will note these concerns in the Technical Review Certification documentation. The ATR team will prepare a Review Report which includes a summary of each unresolved issue. Review Reports will be considered an integral part of the ATR documentation.

(5) Significant unresolved ATR concerns that are documented by the PCX will be forwarded through the MSC to the HQUSACE RIT, including basic research of USACE guidance and an expression of desired outcome, for further resolution in accordance with the policy issue resolution process described in Appendix H, ER 1105-2-100. HQUSACE may choose to defer

the issue to the policy compliance review process or address it directly. At this point the ATR documentation for the concern may be closed with a notation that the concern has been elevated for resolution by HQUSACE. Subsequent submittals of reports for MSC and/or HQUSACE review and approval shall include documentation of the issue resolution process.

(6) The ATR documentation in DrChecks[sm] will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any ensuing discussion, including any vertical coordination, and lastly the agreed upon resolution.

(7) ATR may be certified when all ATR concerns are either resolved or referred to HQUSACE for resolution and the ATR documentation is complete.

(a) Certifications of ATR should be completed, based on work reviewed to date, for the AFB, draft report, and final report. A sample certification is included in ER 1110-1-12. Districts may modify the sample to add PDT members, ATR team members, other functional chiefs, or the District Commander. When ATR is preformed by contract, the appropriate members of the contractor's staff shall sign the statement.

(b) By signing the ATR certification, the leader of the district Planning Community of Practice certifies policy compliance of the decision document.

k. ATR Reporting in Submittals. See Exhibits H-3 through H-7, ER 1105-2-100.

(1) For Feasibility Scoping Meeting submittals, the district will describe the status of review activities and present the review documentation completed to date, including the status of unresolved issues and the most likely resolution. Model certification or required ATR of model(s) must also be discussed.

(2) For AFB submittals, the district will describe the status of all review activities and present any review documentation completed to date, including the status of unresolved issues and the most likely resolution. Technical work products that support the submittal materials (e.g.; surveying & mapping, hydraulics & hydrology, environmental/NEPA documentation, average annual damage and benefit computations, cost estimates, etc.) should have been subjected to review. The documentation should address the PCX and Cost Engineering Directory of Expertise (DX) coordination and the application of the Cost Engineering DX technical review checklist. It should also address the heightened review of real estate costs.

(3) For draft report submittals, the district will provide the review certification(s) and the review documentation for the draft decision document, preliminary draft NEPA document, and the supporting analyses. Review should be complete for all supporting technical work products prior to document submission. Any unresolved review issues and the expected path to resolve these issues should be identified. The documentation should address the PCX and Cost Engineering Directory of Expertise (DX) coordination and the application of the Cost Engineering DX technical review checklist. It should also address the review of real estate costs.

(4) For final report submittals, the district will provide the documentation and certification of review and, if applicable, IEPR. The documentation should address the PCX and Cost Engineering DX coordination and the application of the Cost Engineering DX technical review checklist. It should also address the heightened review of real estate costs.

(5) The project summary accompanying the final report will present the dates of the certifications of the technical and legal adequacy of the final feasibility report, describe the involvement of the PCX, and summarize the involvement of the Cost Engineering DX in the approval of the total project cost estimate and similar efforts in the approval of the real estate cost estimates.

APPENDIX D

Independent External Peer Review

1. General.

a. Decision documents covered by this Circular will undergo DQC, ATR and IEPR if there is a vertical team decision (involving district, major subordinate command, and PCX and Headquarters members) that the covered subject matter (including data, use of models, assumptions, and other scientific and engineering information) is triggered by one or more of the following factors. Decision documents covered by this Circular that do not meet this standard shall undergo DQC and ATR as described in Appendix C.

b. Any of the following factors require an IEPR:

(1) Significant threat to human life (safety assurance).

(2) Total Project Cost > $45M. In considering the $45 million cost trigger, the term "total cost", means the cost of construction (including planning and designing) of the project. In the case of a project for hurricane and storm damage reduction or flood damage reduction that includes periodic nourishment over the life of the project, the term includes the total cost of the nourishment. The total cost shall be based upon the reasonable USACE estimates at the completion of the reconnaissance study for the project. If the reasonable estimate of total costs is subsequently determined to be in excess of $45 million the MSC will determine if the Review Plan should be modified.

(3) A request by a State Governor of an affected state (all or a portion of a state which is within the drainage basin in which the project is or would be located and would be economically or environmentally affected as a consequence of the project).

(4) A request by the head of a Federal or state agency charged with reviewing the project study if he/she determines that the project is likely to have a significant adverse impact on environmental, cultural, or other resources under the jurisdiction of the agency after implementation of proposed mitigation plans.

(a) A decision whether to conduct IEPR must be made within 21 days of the date of receipt of the request by the head of the Federal or State agency.

(b) If the Chief of Engineers decides not to conduct an IEPR following such a request the Chief shall make publicly available the reasons for not conducting the IEPR.

(c) If the Chief of Engineers decides not to conduct an IEPR following such a request, it may be appealed to the Chairman of the Council on Environmental Quality within 30-days and the Chairman shall decide the appeal within 30 days of the date of the appeal.

(5) Significant public dispute as to size, nature or effects of the project.

(6) Significant public dispute as to the economic or environmental cost or benefit of the project.

(7) Cases where information is based on novel methods, presents complex challenges for interpretation, contains precedent-setting methods or models, or presents conclusions that are likely to change prevailing practices.

(8) Any other circumstance where the Chief of Engineers determines IEPR is warranted.

c. Consideration for Safety Assurance Review.

(1) WRDA 2007, Section 2035, Safety Assurance Review, requires a review of the design and construction activities prior to initiation of physical construction and periodically thereafter until construction activities are completed on a regular schedule sufficient to inform the Chief of Engineers on the adequacy, appropriateness, and acceptability of the design and construction activities for the purpose of assuring public health, safety, and welfare. The decision document phase is the initial design phase. A future circular will provide a more comprehensive Civil Works Review Policy that will address the review process for the entire life cycle of a Civil Works project. That document will address the requirements for a safety assurance review for the Pre-Construction Engineering Phase, the Construction Phase, and the Operations Phase.

(2) The purpose of the Safety Assurance Review is to ensure that good science, sound engineering, and public health, safety, and welfare are the most important factors that determine a project's fate. The following is an excerpt from The Twenty First Karl Terzaghi Lecture by Dr. Jorj O. Osterberg, (a former employee of the U. S. Army Corps of Engineers, Waterways Experiment Station), referenced in the American Society of Civil Engineers, Journal of Geotechnical Engineering, Vol. 115, No. 11, November 1989, and should serve as a back drop for conducting Safety Assurance Reviews. It captures the essence of the challenge and purpose of the review.

> "The case histories have illustrated that if redundancy had been carefully and deliberately built into the system, the failures probably would not have occurred. In most cases, failures do not occur because of lack of technical knowledge, but because of human failures. Though building redundancy into the human aspects of geotechnical engineering will certainly reduce the number of failures, human blunders are still bound to occur. Therefore, building physical redundancies into the system is not only important to prevent failures due to physical imperfections but is important to prevent catastrophic failures due to human imperfections."

(3) Factors to consider for a safety assurance review:

(a) Where the failure of the project would pose a significant threat to human life;

(b) Cases where information 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;

(c) The project involves the use of innovative materials or techniques;

(d) The project design lacks redundancy, resiliency, or robustness:

- Redundancy. The use of multiple lines of defense that are linked to potential failure modes. The most vulnerable failure modes need the greatest redundancy.

- Resilience. The use of enhancements to improve the ability of the system to sustain loads greater than the design load to achieve gradual failure modes over some duration rather than sudden failure modes.

- Robustness. The use of more conservative assumptions to increase capacity to compensate for greater degrees of uncertainty and risk.

(e) The project has unique construction sequencing or acquisition plans;

(f) The project has a reduced or overlapping design construction schedule; or

(g) As directed by the Chief of Engineers

(4) The Safety Assurance Review shall focus on the quality of the surveys and investigations, quality of in-kind-contributions and whether it is certifiable for credit in accordance with EC 1165-2-208, the range of alternatives considered, the models used to assess hazards, the level of uncertainty in assessments, and whether the quality and quantity of engineering per ER 1110-2-1150 are sufficient to ensure public welfare, safety, and health.

d. Deferral or Waiver.

(1) The Chief of Engineers may waive or defer some or all of the IEPR requirements of this Circular where warranted by a compelling rationale, per the OMB Peer Review Bulletin. Requests for waivers or deferrals shall be presented and justified and forwarded through the chain of command to the appropriate HQUSACE RIT. If the Chief of Engineers defers the IEPR requirements prior to dissemination of a report, IEPR shall be conducted as soon as practicable. The report of the Chief of Engineers will discuss any waiver or deferral of the IEPR requirements.

(2) Per Section 2034 of WRDA 2007, the Chief of Engineers may exclude a project study from IEPR under certain, limited conditions when there is no environmental impact statement and:

(a) is not controversial;

(b) has no more than negligible adverse impacts on scarce or unique cultural, historic, or tribal

resources;

(c) has no substantial adverse impacts on fish and wildlife species and their habitat prior to the implementation of mitigation measures; and

(d) has, before implementation of mitigation measures, no more than a negligible adverse impact on a species listed as endangered or threatened species under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) or the critical habitat of such species designated under such Act;

(3) The Chief of Engineers may also exclude a project study from IEPR if the study:

(a) involves only the rehabilitation or replacement of existing hydropower turbines, lock structures, or flood control gates within the same footprint and for the same purpose as an existing water resources project;

(b) is for an activity for which there is ample experience within USACE of Engineers and industry to treat the activity as being routine; and

(c) has minimal life safety risk; or

(d) if the project study does not include an environmental impact statement and is a project study pursued under the nine Continuing Authorities (See Appendix F of ER 1105-2-100).

(4) Requests for exclusion shall be presented and justified and forwarded through the chain of command to the appropriate HQUSACE RIT.

e. Tiered: Nothing in this Circular shall be construed to require the Chief of Engineers to conduct multiple reviews for a project study.

2. IEPR Panels. Panels should also be able to evaluate whether the interpretations of analysis and conclusions based on analysis are reasonable. To provide effective review, in terms of both usefulness of results and credibility, review panels should be given the flexibility to bring important issues to the attention of decision makers. However, review panels should be instructed to not make a recommendation on whether a particular alternative should be implemented, as the Chief of Engineers is ultimately responsible for the final decision on a planning or reoperations study. External panels may, however, offer their opinions as to whether there are sufficient analyses upon which to base a recommendation for construction, authorization, or funding. IEPR panels will accomplish a concurrent review that covers the entire decision document or action. The panel will address all the underlying engineering, economics, and environmental work, not just one aspect of the project. This level of review is governed primarily by Sections 2034 and 2035 of WRDA 2007 and the OMB Peer Review Bulletin.

a. Establishment of Panels

(1) For IEPR an eligible organization will select the reviewers according to the guidance in paragraph 2b, below.

(2) Eligible Organizations. IEPR panels will be established by the responsible PCX through contract with an independent scientific and technical advisory organization that must be a 501(c)(3) (Internal Revenue Code of 1986) organization or with the National Academy of Sciences.

(3) The highest degree of credibility of external reviews will be achieved if the responsibility for coordinating the external review process is granted to an organization independent of USACE. Such an independent Outside Eligible Organization (OEO) must be in charge of selecting reviewers, all of whom should be independent of USACE and free of conflicts of interests.

(4) The OEO that selects reviewers for projects should be knowledgeable of the USACE mission, its statutory authorities and related administrative regulations, and other evaluation procedures.

(5) The OEO shall have the following qualifications:

(a) Is described in section 501(c)(3), and exempt from Federal tax under section 501(a) of the Internal Revenue Code of 1986.

(b) Is independent

(c) Is free from conflicts of interest

(d) Does not carry out or advocate for or against Federal water resources projects;

(e) Has experience in establishing and administering independent review panels;

(f) Has proven ability to deliver under significant time constraints.

(6) IEPR reviews will ultimately be more effective if the review panel maintains communication with USACE during the review. This communication, which should not compromise the review's independence, can help the review panel understand USACE assumptions and methods, as well as the practical implications of the review panel's finding and recommendations. The OEO should coordinate this communication between the district, PCX and review panel, as well as communication between the panel and relevant federal agencies, interest groups, and the public.

b. Guidelines for Selection. The three most important considerations in selecting reviewers are the credentials of the reviewers (which include affiliations as well as expertise), the absence of conflict of interest, and the independence of the group that selects the reviewers. Public perception may well have greater influence than the public understands in determining the fate of a project. It is often the case, however, that a minority of stakeholders reflect that "public" perception. Thus the OEO needs to structure the review such that good science, sound engineering, and public welfare are the most important factors that determine a project's fate.

(1) All potential reviewers carry professional and personal biases, and it is important that these biases be disclosed when reviewers are considered and selected. The OEO leading the review shall determine which biases, if any, will disqualify prospective reviewers. It shall also develop criteria for determining if review panels are properly balanced, both in terms of professional expertise as well as in points of view on the study or project at hand.

(2) There is also a challenge of selecting review panels that are viewed as credible and balanced, but that also have adequate knowledge of USACE's often highly complex guidance and analytical methods.

c. Panel Responsibilities. The panel of experts established for a review for a project shall:

(1) Conduct the review for the subject project in a timely manner in accordance with the study and RP schedule;

(2) Assess the adequacy and acceptability of the economic and environmental assumptions and projections, project evaluation data, economic analyses, environmental analyses, engineering analyses, formulation of alternative plans, methods for integrating risk and uncertainty, models used in evaluation of economic or environmental impacts of proposed projects, and any biological opinions of the project study.

(3) Receive from USACE any public written and oral comments provided on the project;

(4) Provide timely written and oral comments throughout the development of the project, as requested; and

(5) Submit a final report, no more than 60 days following the close of the public comment period for the draft project study to enable the district to address all necessary actions before the final report is signed. The report will contain the panel's economic, engineering, and environmental analysis of the project study, including the panel's assessment of the adequacy and acceptability of the economic, engineering, and environmental methods, models, and analyses used. All comments in the report will be finalized prior to their release to USACE for each study phase. If the panel does not complete its review in this period, the processing of the report will continue without delay.

d. Panel Recommendations.

(1) The panel will submit to USACE through the managing organization a final report containing the panel's economic, engineering, and environmental analysis of the project study, including the panel's assessment of the adequacy and acceptability of the economic, engineering, and environmental methods, models, and analyses used by the Corps of Engineers, to accompany the publication of the report of the Chief of Engineers for the project.

(2) The report from the panel of experts will be considered and documentation presented on how issues were resolved or will be resolved by the District Engineer before the district report is signed. The recommendations and responses will be presented to the Civil Works Review Board

by the District Engineer with an IEPR panel or OEO representative participating, preferably in person.

(3) After receiving a report on a project from a panel of experts, HQUSACE shall consider all recommendations contained in the report and prepare a written response for all recommendations adopted or not adopted. Written recommendations of a reviewer or panel of reviewers and the responses of HQUSACE shall be made available to the public, including through electronic means on the Internet.

e. Panel Costs.

(1) The costs of a panel of experts shall be a Federal expense born by the project; and shall not exceed $500,000. The Chief of Engineers may waive the $500,000 limitation if deemed appropriate.

(2) For those panels that have been contracted for prior to 8 November 2007 and whose costs were cost shared under Sec 105 (a) of WRDA 1986 will remain cost shared.

(3) For those panels where contracts have been or will be executed on or after 8 November 2007, the costs of the panel(s) established for IEPR for those studies identified under paragraph 5b will be a Federal expense and will not exceed $500,000 unless the Chief of Engineers determines that a higher cost may be appropriate in a specific case.

(4) For studies conducted by non-Federal interests IEPR costs will initially be born by the non-Federal sponsor. If the project is implemented at some later date these costs may be eligible for reimbursement, subject to the cost limits in 10 b (1) above.

(5) Normal budgetary procedures will be used to seek funds where IEPR funds have not been appropriated. Starting in FY 2010, the costs for any anticipated IEPR will be requested by study (or project) as part of the normal budget development process.

f. Guidelines for Developing the "Charge"

(1) Reviews should identify, explain, and comment upon assumptions that underlie engineering analyses, as well as evaluate the soundness of models, surveys, investigations, and methods. A review panel should bring important issues to the attention of the agency. Review panels should be able to evaluate whether the interpretations of analysis and the conclusions based on analysis are reasonable. However, review panels should be instructed to not present a final judgment on whether a project should be constructed or whether a particular operations plan should be implemented, as the Chief of Engineers is ultimately responsible for this final decision.

(2) Peer reviews, no matter how useful, should not be expected to resolve fundamental disagreements and controversies. Reviewers should aim to draw distinctions between criticisms of the regulations and guidelines and criticisms of how well USACE conformed to the guidance. Reviews should focus on assumptions, data, methods, and models.

(3) Reviews will assist USACE in making decisions, but reviewers should not be asked to make decisions. Reviewers should avoid findings that become "directives" in that they call for modifications or additional studies or suggest new conclusions and recommendations. In such circumstances the reviewers may have assumed the role of advisors as well as reviewers, thus introducing bias and potential conflict in their ability to provide objective review later in the project. Reviewers engaged in the review processes should be selected based upon their professional expertise and should not be "stakeholders".

(4) The MSC's choice about the appropriate level of review should be informed by deliberation with the vertical team.

(5) Frequent communication will help the review panel understand the technical and practical implications of its recommendations. Review panels should highlight areas of disagreement and controversies that may need resolution.

(6) An issue that frequently arises in review, and one not always easily agreed upon, is defining a review panel's boundaries of inquiry. It is not uncommon for an agency or other administrative group to try to limit a review panel's deliberation. However, the line between technical and policy issues is often blurred, and it is often difficult to clearly separate them. USACE should accept comments, but make a distinction in responses when comments pertain to policy which is beyond the scope of an IEPR, but elevated to HQUSACE for consideration under a non-project specific policy review. It is important that panelists focus on their review, and not become defenders of their recommendations.

(7) Review results should be presented to the Chief of Engineers and documentation provided on how issues were addressed and resolved before a final decision is made. Results should be available to the public.

g. Record of Review. DrChecks[sm] will be used to manage all reviews documenting the panel's comments and USACE responses. USACE shall make all written recommendations of a reviewer or panel of reviewers and related USACE responses of USACE available to the public, including through electronic means on the Internet.

3. Planning Centers of Expertise.

a. PCX are responsible for the accomplishment and quality of IEPR for documents covered by this Circular. Centers may conduct the ATR review or manage the review conducted by others. Centers must use outside eligible organizations to manage the selection of panels, the conduct of the review, and the organization and disposition of comments. IEPR will be conducted in addition to an ATR managed or conducted by the PCX in accordance with the fundamental requirements detailed in this Circular.

b. Review will be assigned to the appropriate USACE PCX based on business programs. Districts shall develop Review Plans in coordination with the Centers based on the primary purpose of the basic decision document to be reviewed.

c. For decision documents with multiple purposes (or project purposes not clearly aligned with the PCXs), the home MSC should designate a lead PCX to conduct the review after coordinating with each of the relevant Centers. The assigned PCX will coordinate with other PCX and offices to ensure that a review team with appropriate expertise is assembled.

d. Each PCX must coordinate with the Cost Engineering Directory of Expertise (DX) at the Walla Walla district to conduct reviews (ATR) of cost estimates, construction schedules and contingencies included in all decision documents requiring Congressional authorization. The Cost Engineering DX will assign the reviewer(s) to the ATR teams) and will utilize USACE personnel and/or the private sector to assure highly qualified persons are available to conduct these reviews. In cases where the Cost Engineering DX identifies the need for IEPR, it will inform the assigned PCX and will assist the PCX with establishing the charge for the external independent peer review.

4. Reporting Requirements.

a. Upon identification of a project study for IEPR under this Circular, but prior to initiation of the review, pursuant to WRDA 2007 Section 2034(c)(4), the Chief of Engineers shall notify the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives of the review. Upon MSC approval of each RP with IEPR, the MSC will provide a copy of the signed MSC Approval Memo to its respective HQUSACE RIT. The RIT will then process a notification letter, signed by the Director of Civil Works to both the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives with a copy to ASA (CW.

b. Public Availability and Transmittal to Congress After receiving a report on a project study from a panel of experts under this Circular, the Chief of Engineers (through the respective HQUSACE RIT) shall:

(1) make a copy of the report, and any written response of the Chief of Engineers on recommendations contained in the report, available to the public by electronic means, including the Internet; and

(2) transmit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a copy of the report, together with any such written response, on the date of a final report of the Chief of Engineers or other final decision document for the project study.

c. Annual Report. By 1 November each year, each MSC shall provide HQUSACE, through their respective RIT, a summary of the IEPRs undertaken by the MSC during the previous fiscal year. CECW- P will consolidate the summaries received by the RITs and will provide the Administrator of the Office of Information and Regulatory Affairs in the Office of Management and Budget with a consolidated summary of USACE IEPRs by 15 December of each year. Annual summaries of IEPRs shall include:

(1) The number of IEPRs conducted subject to this Circular.

(2) The number of times alternative procedures were invoked.

(3) The number of times waivers or deferrals were invoked (and in the case of deferrals, the length of time elapsed between the deferral and the IEPR).

(4) Any decision to appoint a reviewer pursuant to any exception to the applicable independence or conflict of interest standards of the OMB Peer Review Bulletin, including determinations by the Secretary of Defense pursuant to Section III (3)(c) of the OMB Peer Review Bulletin.

(5) The number of IEPR panels that were conducted in public and the number that allowed public comment.

(6) The number of public comments provided on each Civil Works Review Plan.

(7) The number of peer reviewers that the Center used that were recommended by professional societies.

d. Report on implementation of Section 2034 of WRDA 2007.

(1) Not later than 8 November 2010, the Chief of Engineers shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report on the implementation of this section.

(2) Not later than 8 November 2013, the Chief of Engineers shall update the previous report taking into account any further information on implementation of this section and submit such updated report to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives.

APPENDIX E

List of Acronyms

AFB – Alternatives Formulation Briefing
ATR - Agency Technical Review
CAP – Continuing Authorities Program
DQC - District Quality Control
DX - Directory of Expertise
EC – Engineering Circular
EIS – Environmental Impact Statement
ER – Engineering Regulation
FACA – Federal Advisory Committee Act
FCSA – Feasibility Cost Sharing Agreement
FOIA – Freedom of Information Act
FY – Fiscal Year
HQUSACE – Headquarters, U. S. Army Corps of Engineers
IEPR – Independent External Peer Review
NED – National Economic Development
NER – National Ecosystem Restoration
MSC – Major Subordinate Command
NAS – National Academy of Sciences
NEPA –National Environmental Protection Act
OEO – Outside Eligible Organization
OMB – Office of Management and Budget
OMRRR – Operations, Maintenance, Repair, Replacement and Rehabilitation
PCX – Planning Center of Expertise
PDT – Project Development Team
PMP – Project Management Plan
QA/QC – Quality Assurance / Quality Control
QMP –Quality Management Plan
RIT – Regional Integration Team (HQUSACE)
RP – Project Review Plan
RMO – Review Management Organization
RTS – Regional Technical Specialist
SME – Subject Matter Expert
USACE – U. S. Army Corps of Engineers
USC – United States Code
WRDA – Water Resources Development Act