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

8 Sep 14

REPLY TO
ATTENTION OF

CESAD-RBT

MEMORANDUM FOR COMMANDER WILMINGTON DISTRICT

SUBJECT: Approval of the Review Plan for Plans and Specification and Design Documentation Report for the Section 204 Oyster Restoration Project, Manteo, North Carolina

1. References:

a. Memorandum, CESAW-TS-E, 18 August 2014, subject: Approval of Review Plan for Plans and Specifications and Design Documentation Report (DDR) for Section 204 Oyster Restoration Project, Manteo, North Carolina (Encl 1).

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

2. The Review Plan (RP) for the Section 204 Oyster Restoration Project, Manteo, North Carolina, Design Phase Plans and Specifications and DDR submitted by the Wilmington District via reference 1.a has been reviewed by this office. Some minor edits to the Review Plan were coordinated with Not Applicable of your organization. The enclosed RP, with the coordinated edits incorporated, is approved in accordance with reference 1.b above.

3. We concur with the conclusion of the District Chief of Engineering that a Type II Independent External Peer Review (Type II IEPR) is not required for this project. The primary basis for the concurrence that a Type II IEPR is not required is the determination that failure or loss of this project would not pose a significant threat to human life.

4. The District should take steps to post the approved Review Plan to its website and provide a link to CESAD-RBT. Before posting to the web site, the names of Corps/Army employees should be removed. Subsequent significant changes to this Review Plan, should they become necessary, will require new written approval from this office.

5. The SAD point of contact is Not Applicable, CESAD-RBT, Not Applicable.

Encl

C. DAVID TURNER
Brigadier General, USA
Commanding

CF:
CESAW-ECP-E/ Not Applicable
CESAW-ECP-E/

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
69 DARLINGTON AVENUE
WILMINGTON, NORTH CAROLINA 28403-1343

REPLY TO
ATTENTION OF:

CESAW-TS-E

18 August 2014

MEMORANDUM FOR Commander, US Army Corps of Engineers, South Atlantic Division (CESAD-RBT), ATTN: Not Applicable, CESAD-RBT, Rm 10M15, 60 Forsyth Street, SW, Atlanta, Georgia 30303-8801

SUBJECT: Approval of Review Plan for Plans and Specifications and Design Documentation Report (DDR) for Section 204 Oyster Restoration Project, Manteo, North Carolina.

1. References

a. EC 1165-2-214, Civil Works Review Policy, 15 Dec 2012

2. I hereby request approval of the enclosed Review Plan for the Plans and Specifications and Design Documentation Report (DDR) for Section 204 Oyster Restoration Project, Manteo, North Carolina. The Review Plan complies with applicable policy and includes our DQC and ATR plans for this project.

3. The district will post the Corps of Engineers, South Atlantic Division (CESAD) approved Review Plan to its website and provide a link to the CESAD for its use. Names of Corps/Army employees are withheld from the posted version, in accordance with guidance.

Encl

KEVIN P. LANDERS SR.
COL, EN
Commanding

US Army Corps of Engineers
Wilmington District

Review Plan

For

Manteo, Old House Channel, NC Section 204 Beneficial Use of Dredged Material for Oyster Restoration Project – Implementation Documents

Dare County, North Carolina
P2 #: 153887

U.S. Army Corps of Engineers
Wilmington District
Wilmington, North Carolina

21 July 2014

TABLE OF CONTENTS

1. PURPOSE AND REQUIREMENTS

1.1 Purpose

This Review Plan defines the scope and level of review activities for design of submerged oyster reef construction measures near Old House Channel (Range 2), located in Pamlico Sound, NC. Beneficial use of dredged material measures will consist of building submerged sand islands to be topped with cultch for oyster reef restoration. Containment of sand for the submerged islands would be accomplished using stone. The three 5-acre stone containment structures, each filled with dredged material, will then be topped with cultch. The review activities consist of District Quality Control (DQC) and Agency Technical Review (ATR). The project is in the design phase and the related documents are Plans and Specifications (P&S) and a Design Documentation Report (DDR). Upon approval, this review plan will be included into the Project Management Plan.

1.2 References

- ER 1110-2-1150, Engineering and Design for Civil Works Projects, 31 Aug. 1999
- ER 1110-1-12, Engineering and Design Quality Management, 31 March 2011
- EC 1165-2-214, Civil Works Review, 15 Dec. 2012
- Quality Control Plan
- Project Management Plan

1.3 Requirements

This review plan was developed in accordance with EC 1165-2-214, 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 provides the procedures for ensuring the quality and credibility of U.S. Army Corps of Engineers (USACE) decision, implementation, and operations and maintenance documents and other work products. The EC outlines three levels of review for implementation documents: District Quality Control, Agency Technical Review, and Independent External Peer Review. Refer to the EC for the definitions and procedures for the three levels of review.

1.4 Review Management Organization (RMO).

The South Atlantic Division is designated as the RMO for this effort.

2. PROJECT INFORMATION AND BACKGROUND

2.1 Project Description

The project will provide for oyster reef restoration in Pamlico Sound through beneficial use of dredged material. The project is being pursued under the authority of Section 204 of the Water Resources Development Act of 1992 (WRDA 1992) – Beneficial Uses of Dredged Material, as

amended by Section 2037 of WRDA 2007. The Section 204 CAP authority authorizes the U.S. Army Corps of Engineers to carry out projects for the protection, restoration, and creation of aquatic and ecologically related habitats, including wetlands, in connection with dredging for construction, operation, or maintenance of an authorized navigation project. For this project, three submerged oyster reefs would be constructed within close proximity of each other, approximately 1.7 miles from Old House Channel (Range 2). Stone sills made of NCDOT Class 2 armor stone (9"-23") would be constructed to create three 5.07 acre containment areas for dredged material. The three 5.07 acre containment areas would contain a total of approximately 135,000 cubic yards of dredged material. The three separate containment areas would be constructed in close proximity of each other with spacing of approximately 100 yards. The core portion of the containment structures would be constructed of NCDOT Class B Stone (5"-12"). Reefs would be constructed during a regularly scheduled maintenance dredging cycle for the navigation channels. Dredged material from maintenance dredging of the federal navigation channel would be pumped into the containment areas and would, most likely, utilize a hydraulic pipeline dredge. However, other dredges could be used. The dredged material would be covered with NCDOT Class A stone and oyster shell to provide habitat for establishment of oysters. Approximately 18 acres of new oyster reef habitat would be created, as well as enhanced service area associated with the reefs.

3. DISTRICT QUALITY CONTROL

District Quality Control (DQC) and Quality Assurance activities for implementation documents (DDRs and P&S) are stipulated in ER 1110-1-12, Engineering & Design Quality Management. The subject project Design Documentation Report (DDR) and Plans and Specifications (P&S) will be prepared by the Wilmington District using the SAW procedures and will undergo DQC. DQC Certification will be verified by the Agency Technical Review Team.

4. AGENCY TECHNICAL REVIEW

Agency Technical Review (ATR) is undertaken to "ensure the quality and credibility of the government's scientific information" in accordance with EC 1165-2-214 and ER 1110-1-12. An ATR will be performed on the Plans and Specifications and Design Documentation Report.

ATR will be conducted by individuals and organizations that are external to the Wilmington District (SAW). The ATR Team Leader will be a Corps of Engineers employee outside the South Atlantic Division. The required disciplines and experience are described below.

4.1 ATR Team Expertise

As stipulated in ER 1110-1-12, ATR members will be sought from the following sources: regional technical specialists (RTS); appointed subject matter experts (SME) from other districts; senior level experts from other districts; Center of Expertise staff; appointed SME or senior level experts from the responsible district; experts from other U.S. Army Corps of Engineers Districts; contractors; academic or other technical experts; or a combination of the above. The ATR Team will be comprised of the following disciplines; knowledge, skills and abilities; and experience levels.

ATR Team Leader. The ATR lead should be a senior professional with experience in preparing Section 204 decision documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. Typically, the ATR lead will also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc).

Coastal Engineering. Team member will have experience with stability of submerged sand and rock structures. Would ideally possess expertise in the design of ecosystem restoration systems, confined dredged disposal areas and submerged sand/rubblemound structures.

Geotechnical Engineering. Team member will be familiar with placement of materials in estuarine environment. Team member will have a thorough understanding of the specific requirements based on study objectives and proposed measures – for example, different properties of soils, to include grain-size distribution, compressibility, shear strength, and load-bearing capacity to assure that the project meets good engineering practice.

Environmental. Team member will have experience with NEPA, EA & Ecosystem Output, dredging, and preferably reef construction.

Operations. Team member will have at least 10 years experience with dredging operations.

4.2 Documentation of ATR

DrChecks^{sm} review software will be used to document all ATR comments, responses, and associated resolutions accomplished throughout the review process. Comments are expected to 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, comments may seek clarification in order to then assess whether further specific concerns may exist. 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 discussion, including any vertical coordination, and lastly the agreed upon resolution. The ATR team will prepare a Review Report which includes a

summary of each unresolved issue; each unresolved issue will be raised to the vertical team for resolution. Review Reports will be considered an integral part of the ATR documentation 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 an overview for the project information in which the ATR members were charged to reviewer;
- 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 ATR may be certified when all ATR concerns are either resolved or referred to U.S. Army Corps of Engineers South Atlantic Division (CESAD) for resolution and the ATR documentation is complete. Certification of ATR should be completed, based on work reviewed for the 95% plans & specifications. A sample certification is included in this Review Plan (see attachment 2).

5. INDEPENDENT EXTERNAL PEER REVIEW (WRDA 2007 Section 2035 Safety Assurance Review)

EC 1165-2-214 provides implementation guidance for both Sections 2034 and 2035 of the Water Resources Development Act (WRDA) of 2007 (Public Law (P.L.) 110-114). The EC addresses review procedures for both the Planning and the Design and Construction Phases (also referred to in USACE guidance as the Feasibility and the Pre-construction, Engineering and Design Phases). The EC defines Section 2035 Safety Assurance Review (SAR), Type II Independent External Peer Review (IEPR). The EC also requires Type II IEPR be managed and conducted outside the Corps of Engineers.

5.1 Type I IEPR

A Type I IEPR is associated with decision documents. No decision documents are addressed/covered by this Review Plan. A Type I IEPR is not applicable to the implementation documents covered by this Review Plan.

5.2 Type II IEPR, Determination

This beneficial use of dredged material project does not trigger WRDA 2007 Section 2035 factors for Safety Assurance Review (termed Type II IEPR in EC 1165-2-214) and therefore, a Type II IEPR review under Section 2035 and/or EC 1165-2-214 is not required. The factors in determining whether a review of design and construction activities of a project is necessary, as stated under Section 2035 and EC 1165-2-214 along with this review plans' applicability statement which follows.

(1) The failure of the project would pose a significant threat to human life.

No significant threat to human life exists. The project involves the creation of submerged oyster reefs and will be pursued in partnership with the State of North Carolina who has already created ten sanctuary oyster reefs throughout the Pamlico Sound.

(2) The project involves the use of innovative materials or techniques.

Proposed dredging practices and high relief configurations are standard for N.C.

(3) The project design lacks redundancy.

The oyster reef design does not require or employ any concept of redundancy. It is likely that the materials used will be routine.

(4) The project has unique construction sequencing or a reduced or overlapping design construction schedule.

The project design is not anticipated to require unique construction sequencing, or a reduced or overlapping design construction schedule. The construction sequence has been used successfully by the Corps of Engineers on other similar works.

As indicated above, this project does not pose a significant threat to human life, and does not trigger any of the EC 1165-2-214 factors for Type II IEPR. Therefore, the District Chief of Engineering, as the Engineer in Responsible Charge has determined that a Type II IEPR of these implementation documents (P&S and DDR) is not needed.

6. MODEL CERTIFICATION AND APPROVAL

Models are not necessary for the Plans and Specifications and the Design Documentation Report.

7. ESTIMATED COSTS AND SCHEDULE

7.1 Project Milestones

District Quality Control	March - April 2015
ATR	May 2015
District BCOE	June 2015
BCOE Certification	July 2015
Issue Date	September 2015
Bid Opening	October 2015
Construction Contract Award 1	November 2015
Construction Contract Award 2	TBD

7.2 ATR Schedule and Cost

The ATR will be conducted in FY15. It is envisioned that each reviewer will be afforded 28 hours review plus 4 hours for coordination. It is envisioned that the ATR Leader will be allowed 40 hours if also serving as a reviewer. The estimated cost range is $15k - $20k. The ATR schedule follows. The dates are based on the 95% draft plans and specifications completion date of May 1, 2015.

ATRT Selected and Resourced (ATR Start)	May 4, 2015
ATR Kickoff and ATR Start	May 6, 2015
ATRT Completes Comments	May 13, 2015
PDT Completes Evaluations	May 22, 2015
ATRT Completes Back Checks	May 28, 2015
ATR Certification	June 1, 2015

8. POINTS OF CONTACT

Per guidance, the names of the following individual will not be posted on the Internet with the Review Plan. Their titles and responsibilities are listed below.

Wilmington District POCs:

Not Applicable

Review Plan, ATR and QM Process,

Project Manager (PM):

Chief of Engineering Branch:

South Atlantic Division POC:

9. MSC APPROVAL

The MSC that oversees the home district is the South Atlantic Division and it is responsible for approving the review plan. Approval will be provided by the MSC Commander. The commander's approval should reflect vertical team input (involving district, MSC, and HQUSACE members) as to the appropriate scope and level of review for the pre-construction and engineering design phase of this effort. Like a PMP, the Review Plan (RP) is a living

document and may change as work progresses. Significant changes to the RP should be approved by following the process used for initially approving the RP. In all cases the MSCs will review the decision on the level of review and any changes made in updates to the project scope.

Attachment 1

ACRONYMS AND ABBREVIATIONS

ATR – Agency Technical Review
BCOE – Biddability, Constructability, Operability and Environmental
CESAD – U.S. Army Corps of Engineers South Atlantic Division
DCP – District Control Plan
DDR – Design Documentation Report
DQC – District Quality Control
EC – Engineer Circular
EIS – Environmental Impact Statements
ER – Engineer Regulations
HQUSACE – Headquarters U.S. Army Corps of Engineers
IEPR – Independent External Peer Review
MSC – Major Subordinate Command
PDT – Project Delivery Team
PMP – Project Management Plan
P&S – Plans and Specifications
RMC – USACE Risk Management Center
RMO – Review Management Organization
RP – Review Plan
RTS – Regional Technical Specialists
SAD – South Atlantic Division
SAW – Wilmington District
SAR – Safety Assurance Review
SME – Subject Matter Expert
USACE – U.S. Army Corps of Engineers
WRDA – Water Resources Development Act

Attachment 2

COMPLETION OF AGENCY TECHNICAL REVIEW

The _____ District has completed the (*type of product*) of (*project name and location*). Notice is hereby given that an Agency Technical Review, appropriate to the level of risk and complexity inherent in the project, has been conducted as defined in the project's Review Plan. During the Agency Technical Review, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained; and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing Corps policy. The review also assessed the DQC documentation and made the determination that the DQC activities employed appear to be appropriate and effective. The Agency Technical Review was managed by (*RMO*). All comments resulting from ATR have been resolved and the comments have been closed in DrChecks^{sm}.

_____(Signature)_____ _____(Date)_____
RMO representative

_____(Signature)_____ _____(Date)_____
ATR Team Leader

_____(Signature)_____ _____(Date)_____
Project Manager

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows:

(*Describe the major technical concerns, possible impact, and resolution*)

As noted above, all concerns resulting from Agency Technical Review of the project have been fully resolved.

_____(Signature)_____ _____(Date)_____
Chief, Engineering, Construction and Planning Division