



REPLY TO
ATTENTION OF

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

CESAD-RBT

16 July 2012

MEMORANDUM FOR COMMANDER, JACKSONVILLE DISTRICT (CESAJ-EN-QC/
LAUREEN A. BOROCHANER)

SUBJECT: Approval of Review Plan for Submerged Artificial Reef Training (SMART) Structures Implementation Documents, Dade County Beach Erosion Control and Hurricane Protection Project, Miami-Dade County, Florida

1. References:

a. Memorandum, CESAJ-EN-QC, 4 May 2012, Subject: Approval of Review Plan for Submerged Artificial Reef Training (SMART) Structures Implementation Documents, Dade County Beach Erosion Control and Hurricane Protection Project, Miami-Dade County, Florida (Enclosure).

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

2. The enclosed Review Plan for the Submerged Artificial Reef Training (SMART) Structures Implementation Documents for Dade County Beach Erosion Control and Hurricane Protection Project dated 4 May 2011 submitted by reference 1.a has been reviewed by this office. As a result of this review, minor changes were coordinated with your staff. The attached Review Plan with the coordinated changes incorporated is hereby approved in accordance with reference 1.b above.

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

4. The District should take steps to post the Review Plan to its web site and provide a link to CESAD-RBT. Before posting to the web site, the names of Corps/Army employees should be removed.

5. The SAD point of contact is Mr. James Truelove, CESAD-RBT, 404-562-5121.

Encl


CHRISTOPHER T. SMITH, P.E.
Chief, Business Technical Division



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

CESAJ-EN-QC

4 May 2012

MEMORANDUM FOR Commander, South Atlantic Division (CESAD-RBT)

SUBJECT: Approval of Review Plan for Submerged Artificial Reef Training (SMART) Structures Implementation Documents, Dade County Beach Erosion Control and Hurricane Protection Project, Miami-Dade County, Florida

1. References.

- a. EC 1165-2-209, Civil Works Review Policy, 31 January 2010
- b. WRDA 2007 H. R. 1495 Public Law 110-114, 08 Nov 07

2. I hereby request approval of the enclosed Review Plan and concurrence with the conclusion that Type II Independent External Peer Review (IEPR) of this project is not required. The Type II IEPR determination is based on the EC 1165-2-209 Risk Informed Decision Process as presented in the Review Plan. Approval of this plan is for the Periodic Nourishment Implementation Documents. The Review Plan complies with applicable policy, provides Agency Technical Review and has been coordinated with the CESAD. It is my understanding that non-substantive changes to this Review Plan, should they become necessary, are authorized by CESAD.

3. The district will post the CESAD approved Review Plan to its website and provide a link to the CESAD for its use.

FOR THE COMMANDER:

Encl

A handwritten signature in black ink that reads "Lauren Borochaner". The signature is fluid and cursive, with a long horizontal stroke at the end.

LAUREEN A. BOROCHANER, P.E.
Acting Chief, Engineering Division

REVIEW PLAN

**For
Submerged Artificial Reef Training (SMART)
Structures
Implementation Documents**

**Dade County
Beach Erosion Control
and Hurricane Protection Project**

Miami-Dade County, Florida

Jacksonville District

3 July 2012

THE INFORMATION CONTAINED IN THIS REVIEW PLAN IS DISTRIBUTED SOLELY FOR THE PURPOSE OF PREDISSEMINATION PEER REVIEW UNDER APPLICABLE INFORMATION QUALITY GUIDELINES. IT HAS NOT BEEN FORMALLY DISSEMINATED BY THE U.S. ARMY CORPS OF ENGINEERS, JACKSONVILLE DISTRICT. IT DOES NOT REPRESENT AND SHOULD NOT BE CONSTRUED TO REPRESENT ANY AGENCY DETERMINATION OR POLICY.



**US Army Corps
of Engineers ®**

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1. PURPOSE AND REQUIREMENTS

a. Purpose. This Review Plan defines the scope and level of review activities for the Dade County Beach Erosion Control and Hurricane Protection Project SMART Structures. The review activities consist of District Quality Control (DQC) and Agency Technical Review (ATR). The project is in the Periodic Nourishment Phase and the related documents are Implementation Documents that consist of Plans and Specifications (P&S) and a Design Documentation Report (DDR). Upon approval, this review plan will be included into the Project Management Plan as an appendix to the Quality Management Plan.

b. References.

- (1). ER 1110-2-1150, Engineering and Design for Civil Works Projects, 31 Aug 1999
- (2). ER 1110-1-12, Engineering and Design Quality Management, 21 Jul 2006
- (3). FCA 1968, WRDA 1974, and WRDA of 1986 (Project Authorization)
- (4). EC 1165-2-209, Civil Works Review Policy, 31 January 2010
- (5) Project Management Plan, Dade County BEC, 113170

c. Requirements. This review plan was developed in accordance with EC 1165-2-209, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and Operation, Maintenance, Repair, Replacement and Rehabilitation (OMRR&R). The EC 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 four levels of review: District Quality Control, Agency Technical Review, Independent External Peer Review and Policy and Legal Review. Refer to the EC for the definitions and procedures for the four levels of review.

d. Review Management Organization (RMO). The South Atlantic Division is designated as the RMO.

2. PROJECT INFORMATION AND BACKGROUND

Dade County is located along the southeast coast of Florida, and contains the city of Miami. Broward County (Ft Lauderdale) lies to the north, and Monroe County (Florida Keys) lies to the south of Dade County. The Dade County shoreline extends along two barrier island segments and three islands, each of which is separated from the mainland, and the city of Miami, by Biscayne Bay. The barrier islands vary in width from about 0.2 to 1.5 miles, with an average width of about 0.5 miles. Each of the three islands to the south is about 1 mile wide. Elevations along the entire coastal region (and much of the mainland) are low, generally less than 10 feet. Along the coastal region elevations are generally the highest along the coastline, sloping gradually downward toward the bay.

The project as originally authorized provided for the placement of beach fill along the 9.3-mile reach of shoreline extending from Bakers Haulover Inlet to Government Cut, and along the 1.2-mile length of Haulover Beach Park, located immediately north of Bakers Haulover Inlet. The 2.4-mile length of Sunny Isles was added to the project in 1985 under a separate authorization. Work on the project (as originally authorized) was begun in 1975 and completed in January 1982 at a total contract cost of about \$48 million. Due to the length of shoreline involved, the project was constructed in several phases, with each phase being administered under a separate contract. These phases of the initial construction of the project are shown in figure 7. The following paragraphs provide a chronological description of each phase of the initial construction of the Dade County BEC & HP project. In addition, other project-related construction has occurred, such as modifications to the adjacent navigation jetties at Bakers Haulover Inlet and Government Cut, construction of a series of detached breakwaters at Sunny Isles, and shore-connected breakwaters at Miami Beach.

Initial fill of the project was completed between May 1978 and October 1980, using 2.9 million cubic yards of sand from an offshore borrow area about 7.5 miles east of Hanna Park. The recommended plan provided for periodic nourishment at four-year intervals using a volume of sand to match expected erosion losses so that the design project beach width would be maintained. Since the initial construction, the project has been renourished 5 times using predominantly the same offshore borrow area. The current event scheduled for FY 2011 will be the 6th renourishment and will utilize the same borrow area.

This review plan is for the Section 227 project to be constructed along 63rd Street in Miami Beach under the National Shoreline Erosion Control Development and Demonstration Program (ERDC initiative). This project consists of a breakwater to be constructed in the near shore following the renourishment of Contract E.

Current Project

The U.S. Army Engineer Research and Development Center (ERDC) Coastal and Hydraulics Laboratory (CHL) is sponsoring this project. CHL is coordinating the National Shoreline Erosion Control Development and Demonstration Program. The Program was authorized under Section 227 of the Water Resources and Development Act of 1996. The focus of Section 227 is the demonstration of prototype-scale "innovative" or "non-traditional" methods of coastal shoreline erosion abatement. Under this program, Reef Balls™ are to be constructed and placed offshore of 63rd Street in Miami Beach at a depth of approximately 8 feet MLLW. The Reef Balls™ will be placed on concrete pads that will be connected together in a line referred to as a Submerged Artificial Reef Training (SMART) structure.

Each SMART structure is approximately 6.5 feet wide by 41 feet long. The structural components include two different reef ball unit types; the Goliath and the Bay ball. The Goliath ball standard size is 6 x 5 ft (1.82m x 1.52m). The bay ball standard size is 2 x 3 ft (0.61m x 0.91m). The breakwater configuration consists of both types of balls in an alternating manner to allow for safe mobility of marine mammals in and around the structure. The components will be molded to the mats prior to placement in the ocean to increase the stability and structural integrity of the breakwater system. The submerged breakwater structure will consist of pads connected side by side in a fashion to create a 1,250-foot long reef using a 100-foot long segment, a 250-foot long segment, and a 400-foot long segment with 250-foot gaps between each segment. The structure crest will be about 1.5 feet below the still water surface at mean lower low water.

The Reef Balls™ will be constructed and/or fabricated at Haulover Beach Park near the marina at Bakers Haulover Inlet. From here they will be transported to the offshore site which is approximately four miles south of the inlet and lowered into place. There are no documented environmental resources within the proposed project area.

This project is scheduled for construction after completion of the beach renourishment project at 63rd Street. The project area for the artificial reef will be surveyed upon completion of the beach renourishment project (Contract E: Award date 30 Sep 2011). With a recent survey, the final location of the artificial reef will be determined.

3. DISTRICT QUALITY CONTROL

District Quality Control (DQC) activities for engineering products are stipulated in ER 1110-1-12, Engineering & Design Quality Management and EC 1165-2-209. DQC will be performed on the P&S and DDR in accordance CESAJ Engineering Division Quality Management System (EN QMS). The EN QMS defines DQC as the sum of two reviews, Discipline Quality Control Review (DQCR) and Product Quality

Control Review (PQCR). Product Quality Control Review is the DQC Certification that will precede ATR. The following EN QMS Procedures define related DQC activities for CESAJ-EN.

[02611 - SAJ Quality Control In-House Products: Civil Works PED](#)

Attachments and Samples

[02600 - QCP QAP Approval](#)

[02611 - DQC Certification](#)

[02611 - PQCR Certification](#)

[02621 - SAJ Sample Quality Control Plan](#)

[02622 - SAJ Quality Control Plan for O&M Dredging](#)

[02710 - SAJ Preparation and Submittal of Civil Works Review Plans](#)

4. AGENCY TECHNICAL REVIEW

a. Scope. Agency Technical Review (ATR) is undertaken to "ensure the quality and credibility of the government's scientific information" in accordance with EC 1165-2-209 and ER 1110-1-12. An ATR will be performed on the P&S pre-final submittals.

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

ATR comments are documented in the DrCheckssm model review documentation database. DrCheckssm is a module in the ProjNetsm suite of tools developed and operated at ERDC-CERL (www.projnet.org).

At the conclusion of each ATR effort, the ATR team will prepare a Review Report summarizing the review. Review Reports will be considered an integral part of the ATR documentation and shall:

- Identify the document(s) reviewed and the purpose of the review;
- Disclose the names of the reviewers, their organization affiliations, and include a short paragraph on both the credentials and relevant expertise of each reviewer;
- Include the charge to the reviewer;
- Describe the nature of their review and their findings and conclusions;
- Identify and summarize each unresolved issues (if any); and
- Include a verbatim copy of each reviewers comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

b. ATR Disciplines. As stipulated 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; experts from other USACE commands; 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.

Civil Engineering/Dredging Operations. The team member should be a registered professional engineer with dredging operations and/or civil/site work project experience that includes dredging and disposal operations, embankments, channels, revetments and shore protection project features.

Structural Engineering. The team member should be a registered professional engineer with experience in marine construction

Geotechnical Engineering. The team member should be a registered professional engineer with experience in shore protection and breakwater projects.

NEPA Compliance. The team member should have experience in NEPA compliance activities and preparation of Environmental Assessments and Environmental Impact Statements for navigation or shore protection projects. Draft or Final NEPA and other environmental documents will be submitted to the ATR team with the DDR and Plans and Specifications to aid in performing ATR.

ATR Team Leader. The ATR Team Leader will be from outside SAD and should have experience with Navigation and/or Shore Protection Projects. ATR Team Leader may be a co-duty to one of the review disciplines.

5. INDEPENDENT EXTERNAL PEER REVIEW

a. General. EC 1165-2-209 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.

b. Type I Independent External Peer Review (IEPR) Determination. 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.

c. Type II Independent External Peer Review (IEPR) Determination (Section 2035). This shore protection Section 227 project does not trigger WRDA 2007 Section 2035 factors for Safety Assurance Review (termed Type II IEPR in EC 1165-2-209) and therefore, a Type II IEPR review under Section 2035 and/or EC 1165-2-209 is not required. The demonstration breakwater crest will be about 1.5 feet below the still water surface at mean lower low water and a failure would not create a loss of life.

6. POLICY AND LEGAL COMPLIANCE

The Jacksonville District Office of Counsel reviews all contract actions for legal sufficiency in accordance with Engineer Federal Acquisition Regulation Supplement 1.602-2 Responsibilities. The subject implementation documents and supporting environmental documents will be reviewed for legal sufficiency prior to advertisement.

7. MODEL CERTIFICATION AND APPROVAL

This project does not use any engineering models that have not been approved for use by USACE.

8. BUDGET AND SCHEDULE

a. Project Milestones.

Milestone	Task	Duration	Start	Finish
	ATR Kick-Off Meeting	1 day	19-Sep-12	19-Sep-12
EN8180	ATR Review	15 days	19-Sep-12	10-Oct-12
	Evaluate ATR Comments	5 days	11-Oct-12	17-Oct-12
	Backcheck and Close ATR Comments	5 days	18-Oct-12	24-Oct-12
	Incorporate ATR Comments	10 days	25-Oct-12	7-Nov-12
	ATR Package Submitted and Reviewed for Certification	3 days	8-Oct-12	13-Nov-12
EN8185	ATR Certified	0 days	13-Nov-12	13-Nov-12

b. ATR Cost Estimate. Each reviewer will be afforded 24 hours review plus 4 hours for coordination and the ATR Leader will be afforded an additional 16 hours for team leader duties. The estimated ATR cost range is \$10,000-15,000.

9. 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.

Jacksonville District POCs:
