



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

08 DEC 2014

CESAD-RBT

MEMORANDUM FOR COMMANDER JACKSONVILLE DISTRICT

SUBJECT: Approval of the Review Plan for the 8.5 Square Mile Area, S-357N Project, Miami-Dade County, Florida

1. References:

a. Memorandum, CESAJ-EN-QC, 13 November 2014, subject: Approval of Review Plan for the 8.5 Square Mile Area, S-357N Project, Miami-Dade County, Florida (Encl 1).

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

2. The Review Plan (RP) for the Design Documentation Report and Plans and Specifications for 3 box-type gated control structures, portion of seepage canal C-358 and a portion of the Pump Station S-357 maintenance road submitted by the Jacksonville District via reference 1.a has been reviewed by this office. The enclosed RP is hereby approved in accordance with reference 1.b above.

3. South Atlantic Division (SAD) concurs with the District Chief of Engineering that a Type II IEPR is not required for this design and construction effort. The primary basis for this concurrence is the determination that failure or loss of the features associated with this design and construction effort would not pose a significant threat to human life.

4. The District should take steps to post the approved RP 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. Subsequent significant changes, such as scope changes or level of review, to this RP, should they become necessary, will require new written approval from this office.

5. The SAD point of contact is [REDACTED]

Encl [REDACTED]

CF: [REDACTED]



REPLY TO  
ATTENTION OF

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

CESAJ-EN-QC

13 November 2014

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

SUBJECT: Approval of Review Plan for the 8.5 Square Mile Area, S-357N Project, Miami-Dade County, Florida

1. References.

- a. EC 1165-2-214, Civil Works Review, 15 December 2012
- b. WRDA 1986; PL99-662 dated November 17, 1986 (Project Authorization)

2. I hereby request approval of the enclosed Review Plan and concurrence with the conclusion that a Type II Independent External Peer Review (IEPR) of the subject project is not required. The recommendation to exclude Type II IEPR is based on the EC 1165-2-214 Risk Informed Decision Process as presented in the Review Plan.

The scope of this review plan addresses a District Quality Control Review of the construction of 3 box-type gated concrete control structures, portion of seepage canal C-358 that was not completed in the previous construction effort and the reconstruction of a portion of the Pump Station S-357 maintenance road. Documents to be reviewed include Plans, Specifications and Design Documentation. 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. Names of Corps/Army employees will be withheld from the posted version, in accordance with guidance.

FOR THE COMMANDER:

[REDACTED]

# **PROJECT REVIEW PLAN**

## **8.5 Square Mile Area, S-357N Project**

### **Miami-Dade County, FLORIDA**

**Jacksonville District**

**November 2014**

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 Modified Water Deliveries to Everglades National Park 8.5 Square Mile Area (SMA), S-357N feature. As discussed below, the review activities consist of a District Quality Control (DQC) effort, an Agency Technical Review (ATR), and a Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES) Review. Also as discussed below, an Independent External Peer Review (IEPR) is not recommended. The Pre-Construction Engineering and Design (PED) phase documents addressed by this Review Plan (RP) are Implementation Documents that consist of Plans and Specifications (P&S) and a Design Documentation Report (DDR) and the construction associated with those documents. 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 August 1999
- (2). ER 1110-1-12, "Engineering and Design Quality Management", 31 March 2011
- (3). ER 415-1-11, "Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES) Review", 1 January 2013
- (4). WRDA 1986; PL99-662 dated November 17, 1986 (Project Authorization);
- (5). EC 1165-2-214, "Civil Works Review", 15 December 2012
- (6). Sarasota County, Florida Shore Protection Project GDM 1991, PAC 1992
- (7). Project Management Plan, Sarasota County, FL – Venice Beach, Hurricane and Storm Damage Reduction (HSDR), Project 113092
- (8). CECW Memorandum, "Programmatic Review Plan for Routine Operation and Maintenance Products", 20 December 2012
- (9). Project Information Report, Rehabilitation Effort for the Sarasota Co., Venice Segment, Beach Erosion Control and Hurricane Protection, 25 August 2006
- (10). 02611-SAJ, Quality Control of In-House Products: Civil Works PED, 21 November 2011
- (11). 08550-SAJ, BCOES Reviews, 21 September 2011

### **c. 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 five levels of review: District Quality Control (DQC), Agency Technical Review (ATR), and an Independent External Peer Review (IEPR), Policy and Legal Review and a Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES) Review.

### **d. Review Plan Approval and Updates**

The South Atlantic Division Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input (involving district, MSC, RMO, and HQUSACE members) as to the appropriate scope and level of review. Like the PMP, the Review Plan is a living document and may change as the project progresses. The Jacksonville District is responsible for keeping the Review Plan up to date. Minor changes to the review plan since the last MSC Commander approval are documented in Attachment "A". Significant changes to the Review Plan (such as changes to the

scope and/or level of review) shall be re-approved by the MSC Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commanders' approval memorandum, will be posted on the Jacksonville District's webpage. The latest Review Plan will be provided to the RMO and home MSC.

**e. Review Management Organization (RMO)**

The South Atlantic Division is designated as the RMO. The RMO, in cooperation of the vertical team, will determine/select/approve the ATR team members. Jacksonville District may assist SAD with management of the ATR and development of the "charge to reviewers."

**2. PROJECT INFORMATION**

**a. Project Location and Name**

The S-357N construction area is located in Miami-Dade County, FL approximately 2.9 miles west of the intersection of Richmond Drive (SW 168<sup>th</sup> St) and Krome Avenue (SW 177<sup>th</sup> Ave).

**b. Project Authorization**

The project is authorized in Section 104 of the Everglades National Park Protection and Expansion Act of 1989 (Public Law 101-229). The Project Cooperation Agreement was executed on 29 September 1994 between the Department of the Army and the South Florida Water Management District.

**c. Project History**

The 8.5 SMA features were designed to mitigate for increased flood risk to the residents and landowners within the 8.5 SMA due to increased water flows and stages in Northeast Shark River Slough (NESRS) and other areas of Everglades National Park (ENP), as a result of the Modified Water Deliveries (MWD) to ENP project. The 8.5 SMA project features were developed initially in the 1992 MWD General Design Memorandum (1992 GDM), reformulated in the 8.5 SMA 2000 General Reevaluation Report (2000 GRR) and then slightly modified and refined during project design and construction. Features of the 8.5 SMA that are currently constructed include a perimeter levee (L-357W) on the western edge of the residential area, a seepage collection canal (C-357) that bisects the area, internal levees on either side of C-357, a pump station (S-357) at the southern end of the seepage canal, and a flow-way that leads to a detention area located south of Richmond Drive. Construction of these features concluded in 2008.

During initial testing of the features, it was identified that this component of the MWD project was not functioning as designed. The Corps evaluated data from the initial operations and identified design refinements necessary to ensure the project could operate to meet its intended purpose. The necessary design refinements are a seepage canal (C-358) and water control structure (S-357N). The majority of C-358 was constructed using Corps labor resources. S-357N and the remaining portion of C-358 will be constructed via a construction contract.

**d. Current Project Description**

This project effort involves the design and construction of 3 box-type gated concrete control structures, portion of seepage canal C-358 that was not completed in the previous construction effort and the reconstruction of a portion of the Pump Station S-357 maintenance road. Each control structure will be equipped with a manually operated double leaf slide gate system and 84" diameter high-density polyethylene (HDPE) pipe. The control structures will discharge into canal C-357.

**e. Public Participation**

The Jacksonville District Corporate Communications Office continually keeps the affected public informed on Jacksonville District projects and activities. There are no planned activities, public participation meetings or workshops that could generate issues to be addressed by the review teams. The project review plan will be posted on the Jacksonville District Internet. Any comments or questions regarding the review plan will be addressed by the Jacksonville District.

**3. DISTRICT QUALITY CONTROL**

District Quality Control and Quality Assurance activities for the project documents (DDRs and P&S) are stipulated in ER 1110-1-12, Engineering & Design Quality Management and QMS 02611-SAJ. The subject project DDR and P&S will be prepared by the Jacksonville District using ER 1110-1-12 procedures and will undergo District Quality Control. 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.

**4. AGENCY TECHNICAL REVIEW**

**a. Risk Informed Decision on Appropriate Level of Review**

Based on the answers to the questions from EC 1165-2-214, Para 15.b, and the additional design requirement, an ATR of the DDR and P&S will be performed.

**b. Agency Technical Review Scope.**

Agency Technical Review (ATR) is undertaken to "ensure the quality and credibility of the government's scientific information" in accordance with EC 1165-2-214 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 DrChecks<sup>sm</sup> model review documentation database. DrChecks<sup>sm</sup> is a module in the ProjNet<sup>sm</sup> suite of tools developed and operated at ERDC-CERL ([www.projnet.org](http://www.projnet.org)). At the conclusion of ATR, the ATR Team Leader will prepare a Review Report that summarizes the review. The report will consist of the ATR Certification Form from EC 1165-2-214 and the DrChecks<sup>sm</sup> printout of the comments.

**c. ATR Disciplines.**

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; 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 and Construction team members may be combined if a qualified individual is available.

ATR Team Leader. The ATR lead should be a senior professional with experience in flood risk management projects and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. ATR Team Leader may be a co-duty to one of the review disciplines. A minimum of 10 years of related project design/construction experience is desired.

Geotechnical Engineering. The team reviewer should be a registered professional with experience in design and analysis of concrete hydraulic structures and retaining walls. A minimum of 5 years of related project design/construction experience is desired.

Structural Engineering. The team reviewer should be a registered professional with experience in concrete hydraulic control structures and retaining walls. A minimum of 5 years of related project design/construction experience is desired.

Civil Engineering. The team reviewer should be a registered professional engineer with experience in civil/site work experience that includes earthwork operations, site drainage, embankments and excavations. A minimum of 5 years of related project design/construction experience is desired.

## **5. BIDDABILITY, CONSTRUCTABILITY, OPERABILITY, ENVIRONMENTAL, AND SUSTAINABILITY (BCOES) REVIEW**

The value of a BCOES review is based on minimizing problems during the construction phase through effective checks performed by knowledgeable, experienced personnel prior to advertising for a contract. Biddability, constructability, operability, environmental, and sustainability requirements must be emphasized throughout the planning and design processes for all programs and projects, including during planning and design. This will help to ensure that the government's contract requirements are clear, executable, and readily understandable by private sector bidders or proposers. It will also help ensure that the construction may be done efficiently and in an environmentally sound manner, and that the construction activities and projects are sufficiently sustainable. Effective BCOES reviews of design and contract documents will reduce risks of cost and time growth, unnecessary changes and claims, as well as support safe, efficient, sustainable operations and maintenance by the facility users and maintenance organization after construction is complete. A BCOES Review will be conducted for this project. Requirements and further details are stipulated in ER 1110-1-12, ER 415-1-11, and QMS 08550-SAJ, BCOES Reviews.

## **6. INDEPENDENT EXTERNAL PEER REVIEW**

### **a. General.**

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.

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

A Type I IEPR is typically associated with decision documents. A Type I IEPR is not applicable to the implementation documents (DDR and P&S) covered by this Review Plan.

### **c. Type II Independent External Peer Review (IEPR) Determination (Section 2035).**

The S-357N Project does not trigger WRDA 2007 Section 2035 factors for Safety Assurance Review and, therefore, the District Engineering Chief, as the Engineer-In-Responsible-Charge, does not recommend a Type II IEPR review under Section 2035 and/or EC 1165-2-214 be performed for this project. The following factors and their applicability to this project were used in determining this recommendation.

- (1). The failure of the project would pose a significant threat to human life.  
*Contract involves the design and construction of below ground channel improvements. Failure of the project does not pose a significant threat to human life in that the constructed channel template is below existing grade.*
- (2). The project involves the use of innovative materials or techniques.  
*Construction of this contract will utilize standard methods and procedures used by the Corps of Engineers on other similar work.*
- (3). The project design lacks redundancy.  
*The project design does not require the addition of redundant project features. Resiliency or robustness incorporated into design features are a function of normal civil works design criteria and are not in excess of customary practice.*
- (4). The project has unique construction sequencing, or a reduced, or overlapping design construction schedule.  
*The design is not innovative and is not using design or construction techniques that are precedent setting; nor is the project using unique construction scheduling or Early Contractor Involvement (ECI) delivery systems. No dewatering or water diversion will be required for construction of the Concrete Box structures. The concrete box control structures will be cast on-site and placed in their final position in the wet.*

## **7. MODEL CERTIFICATION AND APPROVAL**

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

## **8. 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.

## **9. BUDGET AND SCHEDULE**

- (1). Project Milestones. (dates subject to change based on funding)
  - DDR and P&S: DQCR: *September 24, 2014*
  - DDR and P&S: PQCR: *October 6, 2014*
  - DDR and P&S: ATR: *November 5, 2014*
  - ATR Certified: *January 14, 2015*
- (2). ATR Estimated Cost. \$25,000 - \$30,000

**ATTACHMENT A: APPROVED REVIEW PLAN REVISIONS**

| <b>Revision Date</b> | <b>Description of Change</b> | <b>Page / Paragraph Number</b> |
|----------------------|------------------------------|--------------------------------|
|                      |                              |                                |
|                      |                              |                                |
|                      |                              |                                |
|                      |                              |                                |
|                      |                              |                                |

**ATTACHMENT B**

**ACRONYMS AND ABBREVIATIONS**

| <b><u>ABBREVIATIONS</u></b> | <b><u>DEFINED</u></b>   |
|-----------------------------|---|
| ATR                         | Agency Technical Review   |
| BCOES                       | Biddability, Constructability, Operability, Environmental, and Sustainability |
| DQC                         | District Quality Control  |
| EC                          | Engineering Circular  |
| ER                          | Engineering Regulation  |
| ETL                         | Engineering Technical Lead  |
| NEPA                        | National Environmental Policy Act   |
| IEPR                        | Independent External Peer Review  |
| MLW                         | Mean Low Water  |
| NGVD                        | National Geodetic Vertical Datum  |
| OMRR&R                      | Operation, Maintenance, Repair, Replacement and Rehabilitation                |
| P&S                         | Plans and Specifications  |
| PDT                         | Project Delivery Team   |
| PMP                         | Project Management Plan   |
| QA                          | Quality Assurance   |
| QCP                         | Quality Control Plan  |
| QMS                         | Quality Management System   |
| RMC                         | Risk Management Center  |
| RMO                         | Review Management Organization  |
| RP                          | Review Plan   |
| SAD                         | South Atlantic Division   |
| SAJ                         | South Atlantic Jacksonville   |
| SAR                         | Safety Assurance Review (also referred as Type II IEPR)                       |
| WRDA                        | Water Resources Development Act   |

## **Attachment C**

### **ATR Report Outline and COMPLETION OF AGENCY TECHNICAL 8.5 Square Mile Area, S-357N Project in Miami-Dade County, Florida Review of Plans and Specifications (P&S), Design Documentation Report (DDR)**

**ATR REPORT OUTLINE (Unneeded items, such as ATR Team Member Disciplines that are not identified as needed in the Review Plan, shall be deleted from the ATR Report.)**

- 1. Introduction:**
- 2. ATR Team Members:**
  - Environmental Engineer.**
  - Hydrogeology and Geology.**
  - Water Management.**
  - Hydrology and Hydraulics.**
  - Geotechnical Engineering.**
  - Structural Engineering.**
  - Mechanical and Electrical Engineering.**
  - Civil Engineering.**
  - NEPA Compliance.**
  - ATR Team Leader.**
- 3. ATR Objective:**
- 4. Documents Reviewed:**
- 5. Findings and Conclusions:**
- 6. Unresolved Issues:**

## COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the 8.5 Square Mile Area - S-357N Project in Miami-Dade County, Florida, including the design documents, plans and specifications and DDR. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-214 and ER 1110-1-12. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and 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 US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrChecks.

\_\_\_\_\_  
NAME

\_\_\_\_\_  
Date

ATR Team Leader

\_\_\_\_\_  
NAME

\_\_\_\_\_  
Date

Project Manager

\_\_\_\_\_  
NAME

\_\_\_\_\_  
Date

Review Management Office Representative

### CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: Describe the major technical concerns and their resolution.

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

\_\_\_\_\_  
NAME

\_\_\_\_\_  
Date

Chief, Engineering Division (CESAJ-EN)