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

CESAD-RBT 24 March 2020

MEMORANDUM FOR Commander, Jacksonville District, 701 San Marco Boulevard, Jacksonville, Florida 32207

SUBJECT: Approval of the Review Plan for the Central Everglades Planning Project (CEPP), S-356 Pumping Station Project, Miami-Dade County, Florida

1. References:

a. Memorandum, CESAJ-EN-Q, 2020.03.03, subject as above.

b. Engineering Circular (EC) 1165-2-217, Water Resources Policies and Authorities Review Policy for Civil Works, 20 February 2018.

2. The enclosed Review Plan (RP) for the CEPP S-356 Pumping Station Project and reference 1.a. noted above have been reviewed by South Atlantic Division (SAD). SAD concurs with the conclusion that a Type II Independent External Peer Review (IEPR) of the subject project is not required. The RP is hereby approved in accordance with reference 1.b.

3. SAD concurs with the District's RP recommendation that outlines the requirements for District Quality Control (DQC), Agency Technical Review (ATR), and Biddability, Constructability, Operability, Environmental and Sustainability (BCOES) Review. The Safety Assurance Review/Type II Independent External Peer Review is not required. Documents to be reviewed include the Intermediate and Final Plans and Specifications and the Design Documentation Report (DDR).

4. The South Atlantic Division Office shall be the Review Management Organization for this project.

5. The District should take steps to post the approved RP to its website and provide a link to CESAD-RBT. Before posting to the website, the names of Corps/Army employees should be removed. Subsequent significant changes to this RP, such as scope or level of review changes, should they become necessary, will require new written approval from this office.

6. The SAD point of contact is [redacted], CESAD-RBT, [redacted].

[redacted]

Encl

Major General, USA
Commanding

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FLORIDA 32207-8175

CESAJ-EN-Q

MEMORANDUM FOR Commander, South Atlantic Division (CESAD-RBT), 60 Forsyth Street SW, Room 10M15, Atlanta, GA 30303

SUBJECT: Approval of Review Plan for the Central Everglades Planning Project (CEPP) S-356 Pumping Station Project, Miami-Dade County, Florida

1. References:

   a. Engineering Circular (EC) 1165-2-217, Review Policy for Civil Works, 20 Feb 18.

   b. Flood Control Act of 1946, Public Law 79-526, 24 Jul 46.

2. I hereby request approval of the enclosed Review Plan for the CEPP S-356 Pumping Station Project, Miami-Dade County, Florida and concurrence with the conclusion that a Type II Independent External Peer Review (IEPR) of the subject project is not required. The recommendation not to perform a Type II IEPR is based on the EC 1165-2-217 Risk Informed Decision Process as presented in the Review Plan. The Review Plan complies with applicable policy, provides for Agency Technical Review, and has been coordinated with the SAD. It is my understanding that non-substantive changes to this Review Plan, should they become necessary, are authorized by SAD.

3. The district will post the approved Review Plan to its website and provide a link to the SAD for its use. Names of Corps/Army employees will be withheld from the posted version, in accordance with guidance.

4. Point of contact is [redacted], Engineering Review Manager, [redacted]

[redacted]

Encl

Colonel, EN
Commanding

PROJECT REVIEW PLAN

For

Preconstruction, Engineering and Design Phase Implementation Documents

For

Central Everglades Planning Project (CEPP) S-356 Pumping Station Project
Miami-Dade County, FL

Project P2 number: 370939

Jacksonville District

February 2020

US Army Corps of Engineers ®

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.

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1. PURPOSE AND REQUIREMENTS

a. Purpose

This Review Plan (RP) for the Central Everglades Planning Project (CEPP), S-356 Pumping Station (P2 # 370939), will help ensure a quality engineering project is developed by the U.S. Army Corps of Engineers (USACE) in accordance with EC 1165-2-217, "Review Policy for Civil Works." As part of the Project Management Plan (PMP), this RP establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products and lays out a value added process and describes the scope of review for the current phase of work. The EC outlines five general levels of review: District Quality Control/Quality Assurance (DQC/QA), Agency Technical Review (ATR), Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES) Review, Independent External Peer Review (IEPR), and Policy and Legal Compliance Review. This RP will be provided to the Project Delivery Team (PDT), and the DQC, ATR, and BCOES Teams. The technical review efforts addressed in this RP, DQC and ATR, are to augment and complement the policy review processes. The District Chief of Engineering has assessed that the life safety risk of this project is not significant; therefore, a Type II IEPR/Safety Assurance Review (SAR) will not be required, see Paragraph 6. Any levels of review not performed in accordance with EC 1165-2-217 will require documentation in the RP of the risk-informed decision not to undertake that level of review.

b. References

(1). ER 1110-2-1150, "Engineering and Design for Civil Works Projects," dated 31 August 1999

(2). ER 1110-1-12, "Engineering and Design Quality Management," dated 31 March 2011

(3). EC 1165-2-217, "Review Policy for Civil Works," dated 20 February 2018

(4). ER 415-1-11, "Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES) Review," dated 1 January 2013

(5). ER 1110-2-1156, "Safety of Dams," dated 31 March 2014

(6). ER 1110-2-1302, "Civil Works Cost Engineering," dated 30 June 2016

(7). Central Everglades Planning Project, Final Integrated Project Implementation Report and EIS, dated December 2014

(8). Central Everglades Planning Project, Post Authorization Change Report, Feasibility Study and Draft EIS, dated March 2018

c. Requirements

This RP was developed in accordance with EC 1165-2-217, 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 USACE decision, implementation, and operations and maintenance documents and other work products.

d. Review Plan Approval and Updates

The South Atlantic Division (SAD) Commander is responsible for approving this RP. The Commander's approval reflects vertical team input as to the appropriate scope and level of review. Like the PMP, the RP is a living document and may change as the project progresses. The Jacksonville District (SAJ) is responsible for keeping the RP up to date. Minor changes to the RP since the last SAD Commander's approval will be documented in Attachment A. Significant changes to the RP (such as changes to the scope and/or level of review) should be re-approved by the SAD Commander following the process used for initially approving the plan. The latest version of the RP, along with the Commander's approval memorandum, will be posted on SAJ's webpage. The latest RP will be provided to SAD.

e. Review Management Organization (RMO)

SAD is designated as the Review Management Organization (RMO). The RMO, in cooperation with the vertical team, will approve the ATR Team members. SAJ will assist SAD with management of the ATR and development of the charge to reviewers.

2. PROJECT INFORMATION

a. Project Location and Name

The S-356 Project is located in Miami-Dade County, Florida (Figures 1 and 2). This project is a component of CEPP South.

b. Project Authorization

The CEPP was authorized by Congress in the 2016 Water Infrastructure Improvements for the Nation Act, which includes the Water Resources Development Act (WRDA) of 2016 as Title I, in accordance with Section 601 of WRDA 2000 and the recommendations of the Chief of Engineer's Report. The S-356 structure is a component of the authorized project and is located in Miami-Dade County, Florida.

c. Current Project Description

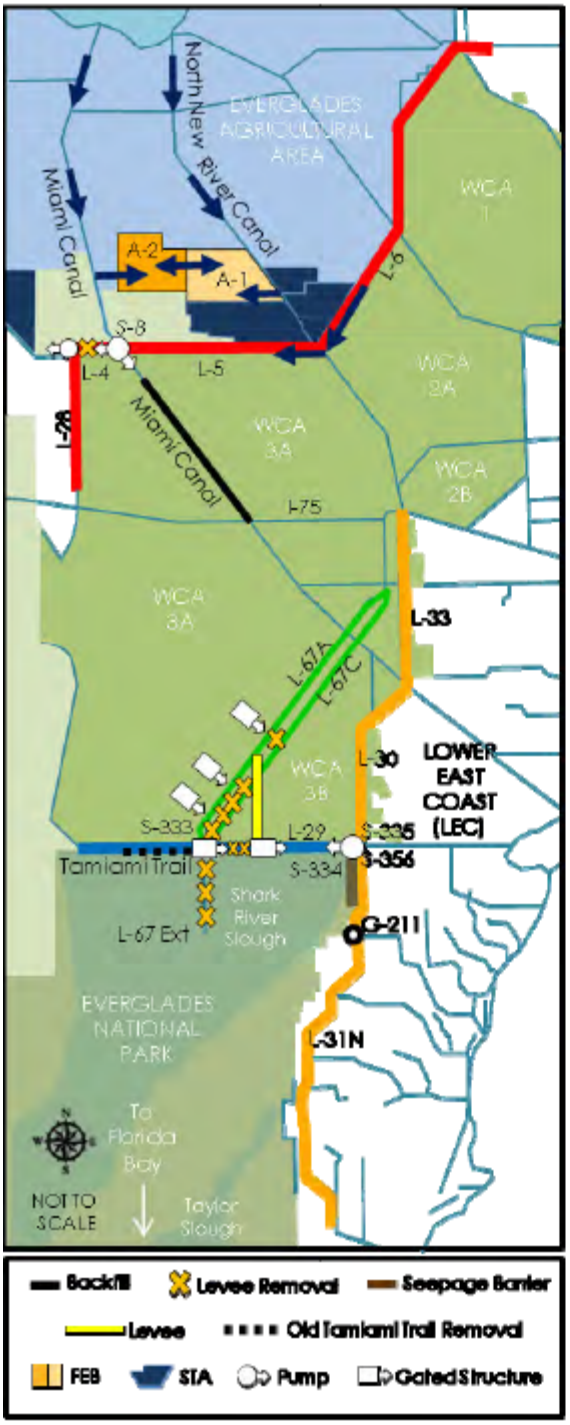
The Central Everglades Planning Project (CEPP) is encompassed in the Comprehensive Everglades Restoration Plan (CERP), which was approved by Congress as a framework for the restoration of the natural system under Section 601 of the Water Resources Development Act of 2000 (WRDA 2000). The CERP, as documented in the 1999 Central and Southern Florida (C&SF) Project Comprehensive Review Study Final Integrated Feasibility Report and Programmatic Environmental Impact Statement (Yellow Book), consists of 68 different components. The purpose of the CERP is to modify structural and operational components of the C&SF Project to achieve restoration of the Everglades and the south Florida ecosystem, while providing for other water-related needs such as urban and agricultural water supply and flood protection. The 68 components identified in the Yellow Book will work together to benefit the ecological structure and function of more than 2.4 million acres of the south Florida ecosystem by improving and/or restoring the proper quantity, quality, timing and distribution of water in the natural system. The CERP will also address other concerns such as urban and agricultural water supply and maintain existing levels of service for flood protection in those areas served by the project. The CERP components were originally planned for implementation over an approximate 40 year period. The CERP is designed to achieve more natural flows by re-directing current flows that are currently discharged to the Atlantic Ocean and Gulf of Mexico, to a more restored flow of water that is distributed throughout the system similar to pre-drainage conditions.

Since the CERP was approved, three projects were authorized in the 2007 WRDA and proceeded into construction (Indian River Lagoon-South, Picayune Strand, and Site 1 Impoundment) and a fourth project, Melaleuca and Other Exotic Plants Biological Controls, was implemented under the programmatic authority in WRDA 2000. Despite this progress, ecological conditions and functions within the central portion of the Everglades ridge and slough community continue to decline due to lack of sufficient quantities of freshwater flow into the central Everglades and timing and distribution problems. To respond to this concern, the U.S. Army Corps of Engineers (USACE) and the South Florida Water Management District (SFWMD) initiated the CEPP in November 2011 to evaluate alternatives for restoring ecosystem conditions in the central portion of the Everglades and opportunities for providing for other water-related needs in the region.

The purpose of the CEPP is to improve the quantity, quality, timing and distribution of water flows to the Northern Estuaries, central Everglades (Water Conservation Area 3 [WCA 3] and Everglades National Park [ENP]), and Florida Bay while increasing water supply for municipal,

industrial and agricultural users. Too much water from Lake Okeechobee during the wet season, and too little water during the dry season impacts salinity levels within the Northern Estuaries, stressing estuarine ecosystems.

Construction and operation of the WCAs compartmentalized a significant extent of the historical Everglades landscape and in turn degraded the structure and function of the remaining system. As a result, the Everglades are approximately half their original size, water tables are lowered, wetlands altered, freshwater flows diverted, water quality degraded, and habitats invaded by non-native plants and animals. All of these impacts are caused directly or indirectly by changes in hydrology. Changes in hydrology have led to the degradation of the historic slough, tree-island and sawgrass mosaic that previously characterized much of the study area, as well as the marl prairies that exist in the southern portion of the area in ENP. The changes in the landscape pattern have had adverse effects on wildlife. Changes in hydrology of the freshwater systems have led to effects on the estuarine and marine environments of Florida Bay. Alterations in seasonal inflow deliveries to Florida Bay have resulted in extreme salinity fluctuations. The already degraded state of the Everglades will continue to worsen in the absence of increased water deliveries, improved water timing and restored distribution. Redirecting a portion of the approximately 1.7 billion gallons of water per day on average that is discharged to the Atlantic Ocean and the Gulf of Mexico is essential to meeting the quantity, quality, timing and distribution of water required to realize a portion of the benefits envisioned in the CERP.



- A-2 Flow Equalization Basin (FEB) (14,000 acres), including exterior and internal levees
  - Seepage Pump Station (500 cubic feet per second (cfs))
  - Water Control Structures (culverts, spillway)
  - Emergency Overflow Weir
  - Canals (inflow, seepage collection, internal collection, and discharge)
- L-6 Canal Flow Diversion
- L-5 Canal Conveyance Improvements
- S-8 Pump Station Complex Modifications
- L-4 Levee Degrade (approximately 2.9 miles) and Pump Station (360 cfs)
- Miami Canal Backfill (approximately 13.5 miles from 1.5 miles south of S-8 to Interstate 75)
- S-333 Spillway Modification (1,150 cfs gated spillway adjacent to S-333; 2,500 cfs total)
- L-29 Canal Gated Spillway (1,230 cfs)
- L-67A Conveyance Structures (three, 500 cfs)
- L-67C Levee Gap (6,000 feet)
- L-67C Levee Degrade (approximately 8 miles)
- Blue Shanty Levee, WCA 3B (approximately 8.5 miles)
- L-29 Levee Degrade (4.3 mi, within Blue Shanty Flowway)
- L-67 Extension Levee Degrade and Canal Backfill (approximately 5.5 miles)
- Old Tamiami Trail Removal (approximately 6 miles)
- S-356 Pump Station Modifications (increase to 1,000 cfs)
- Seepage Barrier,L-31N Levee (approximately 4.2 miles)
- System-wide Operations Refinements

Figure 1. CEPP Recommended Plan (CEPP Final PIR and EIS, April 2014)

Features primarily for seepage management, which are required to mitigate for increased seepage resultant from the Blue Green line features include: S-356, a new 1,000 cfs pump station to replace the existing temporary S-356 pump station, and an approximately 4.2 mile long, 35 feet deep tapering (potential variable seepage wall depths) seepage barrier cutoff wall

along the L-31N Levee, just south of Tamiami Trail and east of the ENP Northeast Shark River Slough (NESRS).

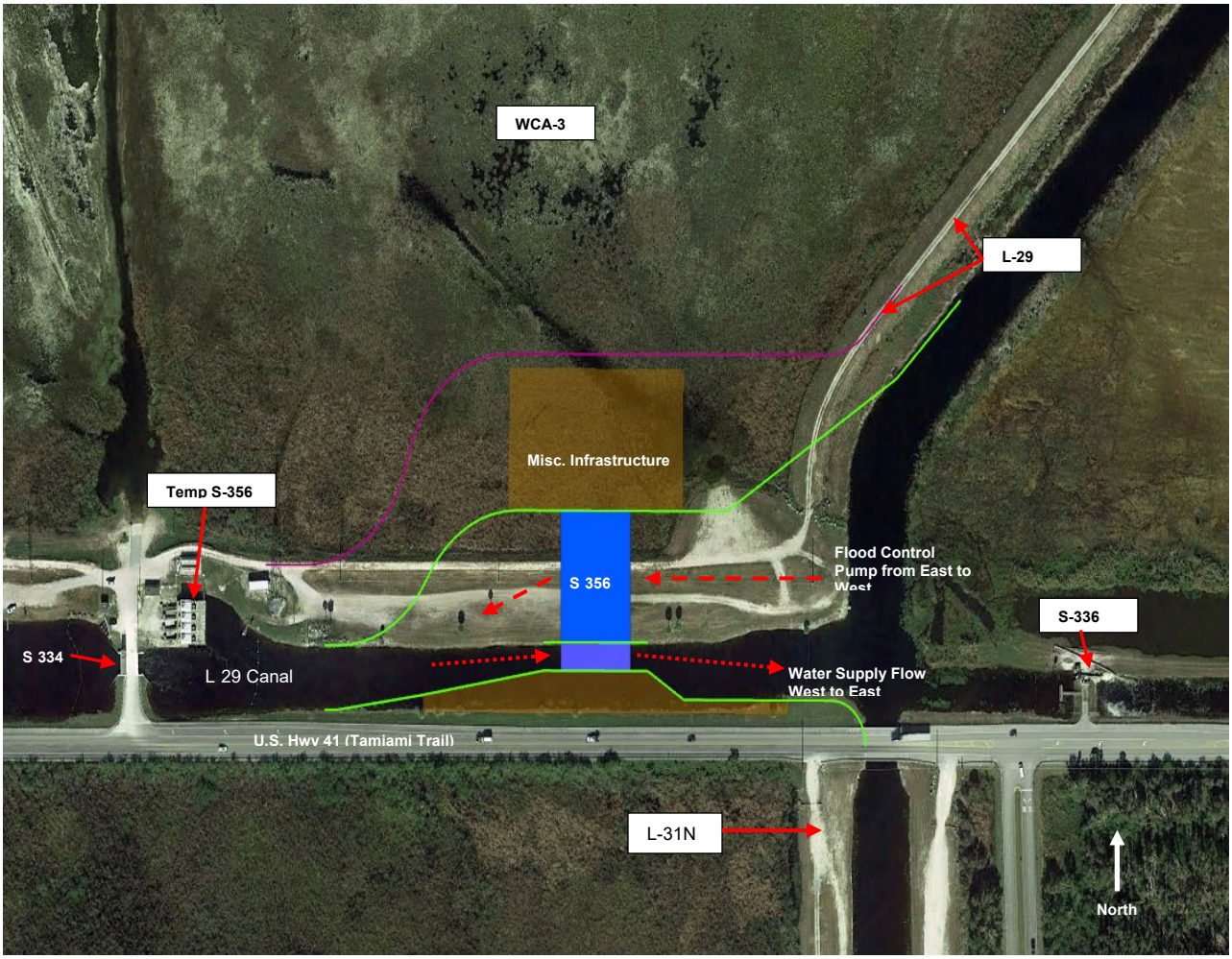


Figure 2. Site Plan (S-356, December 2019)

Major features associated with the S-356 project are as follows:

1. 6-bay pumping station (4 - 250 cfs pumps & 2 - 125 cfs pumps) with total firm capacity of 1,000 cfs (total station capability 1,250 cfs).
2. Levee (L-29) degrade & reconstruction.
3. Sheetpile wall within the L-29 Canal
4. Gate controlled spillway (integrated with the pumping station)

d. Public Participation

The SAJ's Corporate Communications Office continually keeps the public informed on SAJ projects and activities. There are no controversial concerns, planned activities, public participation meetings, or workshops that could generate issues needing provision to review teams. The project RP will be posted on SAJ's webpage. Any comments or questions regarding the RP will be addressed by SAJ.

e. In-Kind-Contributions by Project Sponsor

The South Florida Water Management District (SFWMD) is the non-Federal sponsor for the project and will be afforded the opportunity to review and provide comment to deliverable products (Plans, Specifications, and Design Documentation Report) at the Preliminary, Intermediate, and Final stage of design. There are no required additional in-kind sponsor contributions related to the P&S and design documentation report (DDR) that could affect this RP or related reviews.

f. Civil Works Cost Engineering Mandatory Center of Expertise (MCX) Review and Certification

The cost related documents associated with this contract do not require external peer review or certification. Therefore, no additional review requirements will be executed by the Cost Engineering Mandatory Center of Expertise (MCX) for the implementation documents addressed by this RP.

3. DISTRICT QUALITY CONTROL

a. Requirements

All implementation documents (including supporting data, analyses, environmental compliance documents, etc.) shall undergo a DQC. A DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the PMP. DQC will be performed on the P&S and DDR in accordance with SAJ's Engineering Division Quality Management System (EN QMS). The EN QMS 02611 defines DQC as the sum of two reviews, Discipline Quality Check and Review (DQCR) and Product Quality Control Review (PQCR).

b. Documentation

DQCRs occur during the design development process and are carried out as a routine management practice by each discipline. Checklists are utilized by each discipline to facilitate the review and to document the DQCR review comments. Certification of the DQCR is signed by the Branch Chief certifying that all design analyses and products have been completed in accordance with the EN QMS process prior to release from the Branch.

The PQCR shall ensure consistency and effective coordination across all disciplines and shall assure the overall coherence and integrity of the products. Review comments and responses for this review will be documented in DrChecks^{sm}. The PQCR shall be quality control (QC) certified by the Engineering Technical Lead (ETL), all applicable Section and Branch Chiefs, and the Division Chief. This PQCR Certification signifies that all DQCR Certifications are complete, as well as the PQCR.

4. AGENCY TECHNICAL REVIEW

a. Risk-Informed Decision on Appropriate Level of Review

PED phase implementation documents are being prepared for the S-356 Pump Station Project. Therefore, an intermediate and final ATR of the P&S and DDR documents for the design will be undertaken.

b. Agency Technical Review Scope.

ATR is undertaken to "ensure the quality and credibility of the government's scientific information" in accordance with EC 1165-2-217 and ER 1110-1-12. An ATR will be performed on the P&S and DDR intermediate and pre-final submittals.

ATR will be conducted by individuals and organizations that are external to SAJ. The ATR Team Leader will be a USACE employee outside SAD. The required disciplines and experience are described below.

ATR comments will be documented in the DrChecks^{sm} model review documentation database. DrChecks^{sm} is a module in the ProjNet^{sm} suite of tools developed and operated at ERDC-CERL (www.projnet.org). At the conclusion of the ATR, the ATR Team Leader will prepare an ATR Review Report that summarizes the review. An outline for an ATR Review Report is in Attachment C. The report will include at a minimum the Charge to Reviewers, ATR Certification Form from EC 1165-2-217, and the DrChecks^{sm} 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); subject matter experts (SME) certified in CERCAP; 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.

ATR Team Leader: The ATR team lead is a senior professional outside the home MSC with extensive experience in preparing Civil Works documents and conducting ATRs. The lead has the necessary skills and experience to lead a virtual team through the ATR process. The ATR lead may also serve as a reviewer for a specific discipline.

Civil Engineer: The ATR member shall be a senior level, professionally registered engineer with extensive experience with civil/site work projects to include earthen channels, embankments, road and highway, relocations, paving and drainage. The Civil Engineer reviewer should have a minimum of 10 years of experience.

Electrical Engineer: The ATR member should be a senior level, professionally registered engineer with extensive experience with engineering design of flood risk management and ecosystem restoration project features such as water control structures, pumping stations, related systems and components. The Electrical Engineer reviewer should have a minimum of 10 years of experience.

Engineering Geologist: The ATR member shall have experience in assessing internal erosion (seepage and piping) beneath earth fill dams constructed on karst formations. The engineering geologist shall be familiar with identification of geological hazards, exploration techniques, field

and laboratory testing, and instrumentation. The engineering geologist shall be experienced in the design of grout curtains and must be knowledgeable in grout theology, concrete mix designs, and other materials used in foundation seepage barriers.

Geotechnical Engineer: The ATR member shall have experience in the field of geotechnical engineering, analysis, design, and construction of earth fill dams. The geotechnical engineer shall have experience in subsurface investigations, rock and soil mechanics, internal erosion (seepage and piping), slope stability evaluations, erosion protection design, and earthwork construction. The geotechnical engineer shall have knowledge and experience in the forensic investigation of seepage, settlement, stability, and deformation problems associated with high head dams and appurtenances constructed on rock and soil foundations.

Hydraulic Engineer: The ATR member shall have experience in the analysis and design of hydraulic structures (e.g., spillways, outlet works, pumping stations, and stilling basins).

Mechanical Engineer: The ATR member shall have experience in design of flood risk management project features such as pump stations, related systems and components, machine design, machine rehabilitation and familiarity with design of mechanical gates and controls for flood control structures.

Structural Engineer: The ATR member shall have experience and be proficient in performing stability and finite element analysis. The structural engineer shall have specialized experience in the design, construction and analysis of flood risk management project features such as pump stations, related systems and components.

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. BCOES review 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 and ER 415-1-11.

6. INDEPENDENT EXTERNAL PEER REVIEW

a. General.

EC 1165-2-217 provides guidance for the implementation of IEPR according to Sections 2034 and 2035 of the WRDA of 2007 (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. In addition, following the expiration of Section 2035 of the WRDA, USACE issued memorandum "Interim Guidance on Streamlining Independent External Peer Review (IEPR) for Improved Civil Works Product Delivery" dated 5 April 2019 documenting the continued importance of Type II IEPR on high risk design and construction activities. The District Chief of Engineering, as the Engineer-In-Responsible-Charge, will make a risk-informed decision whether a project would benefit from a Type II IEPR and document the rationale to conduct or not conduct a Type II IEPR in the RP.

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

A Type I IEPR is associated with decision documents. A Type I IEPR is not applicable to the implementation documents covered by this RP.

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

The District Chief of Engineering, as the Engineer-In-Responsible-Charge, has evaluated the CEPP S-356 Pumping Station Project against EC 1165-2-217 and memorandum "Interim Guidance on Streamlining Independent External Peer Review (IEPR) for Improved Civil Works Product Delivery" dated 5 April 2019, and has determined a Type II IEPR is not required, based on the results of the Risk-Informed Decision Process for Type II IEPR determination. For this RP, the factors in determining whether a review of design and construction activities of a project are considered necessary are as follows:

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

This project is an ecosystem component of the CEPP for seepage management that is required to mitigate for increased seepage resultant from the Blue Green line features of the Recommended Plan. Components of the project are a pumping station and integrated spillway. The L-29 will be relocated and reconstructed following current levee safety standards for this project. Additionally, existing infrastructure in all directions of this facility eliminate failure of this project alone to pose a significant risk to human life.

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

This project will utilize methods and procedures used by the Corps of Engineers on other similar works.

(3) The project design lacks redundancy.

This project design does not require the addition of redundant project features or redundancy design considerations beyond those required of professional certification.

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

This project's construction sequence and schedule have been used successfully by the Corps of Engineers on other similar works. Construction schedules do not have unique sequencing and activities are not reduced or overlapped.

Based on the discussion above, the District Chief of Engineering, as the Engineer-In-Responsible-Charge, does not recommend a Type II IEPR of the P&S and DDR.

7. POLICY AND LEGAL COMPLIANCE

The SAJ 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. Once approved, SAJ will post the approved RP on the SAJ webpage for viewing by the public.

8. MODEL CERTIFICATION AND APPROVAL

The project does not use any engineering models that have not been approved for use by USACE. The following engineering models, software, and tools are anticipated to be used:

Model Name	Version
HEC-RAS	5.0.7 (or later)
HY-8	7.5
LEAP Conspan	12.01.00.57
LEAP Bridge Enterprise	14.00.00.19
LEAP Bridge Steel	18.00.00.31
LEAP Bridge Concrete	18.00.00.34
RAM Connection	12.00.01.040
RAM Elements	15.00.00.18
STAAD Foundation	05.03.00.14
STAAD Pro	21.03.00.146
CWALSHT	11.09.2007
LPILE	2019.11.1.0
Bentley MicroStation CONNECT	10.xx
GeoStudio 2018 R2	9.1.1.16749
GeoStudio 2019	10.0.0.17401
WASH123D (GMS Platform)	9.0

Table 1: Engineering Models, Software, and Tools

9. PROJECT DELIVERY TEAM DISCIPLINES

Discipline/Role	Name	Description of Credentials
Civil Engineering	[redacted]	SAJ – Civil Section Chief
Structural Engineering	[redacted]	SAJ – Structures Section Chief
Geotechnical Engineering	[redacted]	SAJ – Dams and Levees Section Chief
Geotechnical Engineering	[redacted]	SAJ – Geotechnical Design Section Chief
Hydraulic Design Engineering	[redacted]	SAJ – Hydraulic Design Section Chief
Hydrologic Modeling	[redacted]	SAJ – Hydrologic Modeling Section Chief
Water Management	[redacted]	SAJ – Water Management Section Chief
Specifications	[redacted]	SAJ – Specifications Section Chief
Mechanical & Electrical Engineering	[redacted]	SAJ – Design Branch Chief
Cost Engineering	[redacted]	SAJ – Cost Estimating Section Chief

Table 2: PDT Disciplines

10. BUDGET AND SCHEDULE

a. Project Milestones.

Task	Start Date	End Date
Draft Intermediate P&S Complete	9-Oct-2020	15-Jun-2021
Intermediate P&S DQCR	16-Jun-2021	7-Jul-2021
Intermediate P&S PQCR	8-Jul-2021	11-Aug-2021
Intermediate P&S ATR	12-Aug-2021	1-Sept-2021
Evaluate ATR Comments	2-Sept-2021	16-Sept-2021
ATR Review Certification	17-Sept-2021	23-Sept-2021
Intermediate P&S BCOES	12-Aug-2021	23-Sept-2021
Draft Final P&S Complete	16-Jun-2021	7-Dec-2021
Final P&S DQCR	8-Dec-2021	13-Jan-2022
Final P&S PQCR	14-Jan-2022	28-Feb-2022
Final P&S ATR	1-Mar-2022	21-Mar-2022
Evaluate ATR Comments	22-Mar-2022	4-Apr-2022
ATR Review Certification	5-Apr-2022	18-Apr-2022
Final P&S BCOES	21-Mar-2022	29-Apr-2022
BCOES Certification	25-Apr-2022	29-Apr-2022
Contract Advertised	30-Jun-2022	11-Aug-2022

Table 3: Project Schedule Milestones

b. ATR Cost. Funds will be budgeted to execute ATR and the schedule as outlined above. It is envisioned that each reviewer will be afforded 20 hours review plus 8 hours for coordination. The ATR Team Leader will be funded for 20 hours. The estimated cost range is $35,000 - $50,000.

11. POINTS OF CONTACT

Title	Organization	Phone
Quality Manager	CESAD-RBT	[redacted]
Review Manager	CESAJ-EN-Q	[redacted]

Table 4: Review Plan Point of Contacts

ATTACHMENT A: APPROVED REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number

Table 5: Review Plan Revisions

ATTACHMENT B: PARTIAL LIST OF ACRONYMS AND ABBREVIATIONS

Acronyms	Defined
AFB	Alternatives Formulation Briefing
ATR	Agency Technical Review
BCOES	Biddability, Constructability, Operability, Environmental, and Sustainability Review
CERCAP	Corps of Engineers Reviewer Certification and Access Program
CY	Cubic Yards
DDR	Design Documentation Report
DQC	District Quality Control
DQCR	Discipline Quality Control Review
EA	Environmental Assessment
EC	Engineering Circular
ER	Engineering Regulation
ERDC-CERL	Engineer Research and Development Center – Construction Engineering Research Laboratory
ESA	Endangered Species Act
ETL	Engineering Technical Lead
EV	Emergent Vegetation
FDEP	Florida Department of Environmental Protection
FONSI	Findings of No Significant Impacts
FSCA	Feasibility and Cost Sharing Agreement
FY	Fiscal Year
GRR	General Reevaluation Report
IEPR	Independent External Peer Review
LPP	Locally Preferred Plan
MCX	Mandatory Center of Expertise
MLLW	Mean Low Low Water
MSC	Major Subordinate Command
NAS	National Academy of Sciences
NEPA	National Environmental Policy Act
ODMDS	Ocean Dredged Material Disposal Site
OMB	Office of Management and Budget
OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
P&S	Plans and Specifications
PED	Preconstruction Engineering and Design
PDT	Project Delivery Team
PM	Project Manager

Acronyms	Defined
PMP	Project Management Plan
PPA	Project Partnering Agreement
PQCR	Product Quality Control Review
QA	Quality Assurance
QCP	Quality Control Plan
QMP	Quality Management Plan
QMS	Quality Management System
RMC	Risk Management Center
RMO	Review Management Organization
RP	Review Plan
RTS	Regional Technical Specialist
SAD	South Atlantic Division Office
SAJ	South Atlantic Jacksonville District Office
SAR	Safety Assurance Review (also referred as Type II IEPR)
SAV	Submerged Aquatic Vegetation
SME	Subject Matter Expert
USACE	U.S. Army Corps of Engineers
WRDA	Water Resources Development Act

Table 6: Abbreviations

ATTACHMENT C: ATR REVIEW REPORT OUTLINE

CEPP S-356 Pumping Station Project

Miami-Dade County, FL

Review of Plans and Specifications (P&S) and the Design Documentation Report (DDR)

ATR REPORT OUTLINE:

1. **Introduction:**
2. **Project Description:**
3. **ATR Team Members:**

   ATR Team Leader.

   Civil Engineering.

   Electrical Engineering.

   Engineering Geologist.

   Geotechnical Engineer.

   Hydraulic Engineer.

   Mechanical Engineering.

   Structural Engineering.
4. **ATR Objective:**
5. **Documents Reviewed:**
6. **Findings and Conclusions:**
7. **Unresolved Issues:**

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the Preconstruction, Engineering and Design Phase Implementation for the CEPP S-356 Pumping Station Project, Miami-Dade County, Florida, including the design documents, plans and specifications (P&S), and Design Documentation Report (DDR). The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-217 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[sm].

_____ _____

NAME
ATR Team Leader

Date

_____ _____

[redacted]
Engineering Technical Lead
CESAJ-EN-DL

Date

_____ _____

[redacted]
Review Management Office Representative
CESAD-RBT

Date

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.

_____ _____

[redacted]
Chief, Engineering Division
SAJ-EN

Date