DEPARTMENT OF THE ARMY
SOUTH PACIFIC DIVISION, CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1399

REPLY TO
ATTENTION OF

CESPD-PDC

4 March 2013

MEMORANDUM FOR Commander, Los Angeles District, ATTN: CESPL-PM-C, Mr. Oscar (Thomas) Bucklew

Subject: Santa Ana River Mainstem, Prado Dam, CA, (Sewage Treatment Plant Dike and National Housing Tract Dike) Review Plan Approval

1. Santa Ana River Mainstem, Prado Dam, CA, (Sewage Treatment Plant Dike and National Housing Tract Dike) Review Plan that is enclosed is in accordance with Engineering Circular (EC) 1165-2-214, Review of Decision Documents, dated 15 Dec 2012. The South Pacific Division, Planning and Policy Division, Regional Business Technical Division, and Los Angeles District Support Team have reviewed the Review Plan that has been submitted. The South Pacific Division approves the Santa Ana River Mainstem, Prado Dam, CA, (Sewage Treatment Plant Dike and National Housing Tract Dike) Review Plan.

2. With MSC approval the Review Plan will be made available for public comment via the internet and the comments received will be incorporated into future revisions of the Review Plans. The Review Plan includes Independent External Peer Review Type II Safety Assurance Review (SAR).

3. I hereby approve the Review Plan which is subject to change as study circumstances require. This is consistent with study development under the Project Management Business Process. Subsequent revisions to the Review Plan after public comment or during project execution will require new written approval from this office.

4. Points of contact for this action are Mr. Boniface (Boni) Bigornia, CESPD-RBT, 415-503-6567, boniface.g.bigornia@usace.army.mil and Mr. Paul Bowers, CESPD-PDC, 415-503-6556, paul.w.bowers@usace.army.mil .

Building Strong From New Mexico All The Way To The Pacific!

Encl
Review Plan

ANDREW B. NELSON, P.E.
COL, EN
Acting Commander

REVIEW PLAN

SANTA ANA RIVER MAINSTEM – PRADO DAM, CALIFORNIA
(Sewage Treatment Plant Dike and National Housing Tract Dike)

LOS ANGELES DISTRICT

Prepared by:

U.S. Army Corps of Engineers
Los Angeles District

Revised: December 21, 2012

US Army Corps
of Engineers ®
Los Angeles District

REVIEW PLAN

SANTA ANA RIVER MAINSTEM – PRADO DAM, CALIFORNIA
(Sewage Treatment Plant Dike and National Housing Tract Dike)
LOS ANGELES DISTRICT

REVIEW PLAN

SANTA ANA RIVER MAINSTEM – PRADO DAM, CALIFORNIA
(Sewage Treatment Plant Dike and National Housing Tract Dike)
Riverside & San Bernardino Counties, California

December 21, 2012

1. INTRODUCTION

a. Purpose. This document outlines the Review Plan for defining the scope and level of quality management activities and peer review for the Prado Dam element of the Santa Ana River Mainstem Project (SARM). Prado Dam is a separable element of the Santa Ana River Mainstem, CA project.

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) WRDA 2007 H. R. 1495 Public Law 110-114, 8 Nov 2007
(4) EC 1165-2-209, Civil Works Review Policy, 31 Jan 2010
(5) Army Regulation 15–1, Committee Management, 27 November 1992 (Federal Advisory Committee Act Requirements)
(6) National Academy of Sciences, Background Information and Confidential Conflict Of Interest Disclosure, BI/COI FORM 3, May 2003

c. Review Requirements. This review plan was developed in accordance with EC 1165-2-209, which establishes the procedures for ensuring the quality and credibility of the U.S. Army Corps of Engineers (USACE) decision and implementation documents through independent review. This Review Plan describes the scope of review for the current phase of work. All appropriate levels of review (DQC, ATR, Type II IEPR (SAR) and Policy and Legal Review) will be included in this Review Plan and any levels not included will require documentation in the Review Plan of the risk-informed decision not to undertake that level of review. The Review Plan identifies the most important skill sets needed in the reviews and the objective of the review and the specific advice sought, thus setting the appropriate scale and scope of review for the individual project.

2. PROJECT DESCRIPTION

a. Project Authority. Construction of the Santa Ana River Mainstem project was authorized by Section 401(a) of the Water Resources Development Act of 1986. Section 401(a) authorized the project in the Phase I General Design Memorandum, except the Secretary of the Army was authorized to plan, design, and construct a flood control storage dam on the upper Santa Ana River, in lieu of the Mentone Dam feature of the recommended project. The Phase II of the General Design Memorandum on the Santa Ana River Mainstem including Santiago Creek was subsequently completed by the District in August 1988. The WRDA of 1996 added language to the SARM project

modifying the cost sharing and providing direction to determine whether the Prado Dam feature may be considered separable element. In 2002, approval was granted that the Prado Dam feature of the SARM project could be considered a separable element. Subsequent to that decision, a PCA was signed between the Corps of Engineers and the Orange County Flood Control District for the Prado Dam element of the Santa Ana River Mainstem, CA project.

b. Location and Description. The Prado Dam and Basin are located along a reach of Santa Ana River in the California Counties of Riverside and San Bernardino. As a separable element of the SARM project, the purpose of this element of the authorized project is to provide additional capacity for storage of floodwaters and sediment by enlarging the existing Prado Dam Reservoir. The higher water surface elevations behind Prado Dam associated with raising the dam requires acquisition of property at the outer perimeter of the "reservoir" and protection of certain areas of public and private property if feasible, in lieu of acquisition. Two such areas to be protected by the construction of dikes are the Corona Sewage Treatment Plant and the National Housing Tract, both located in the City of Corona California. See Figure 1.

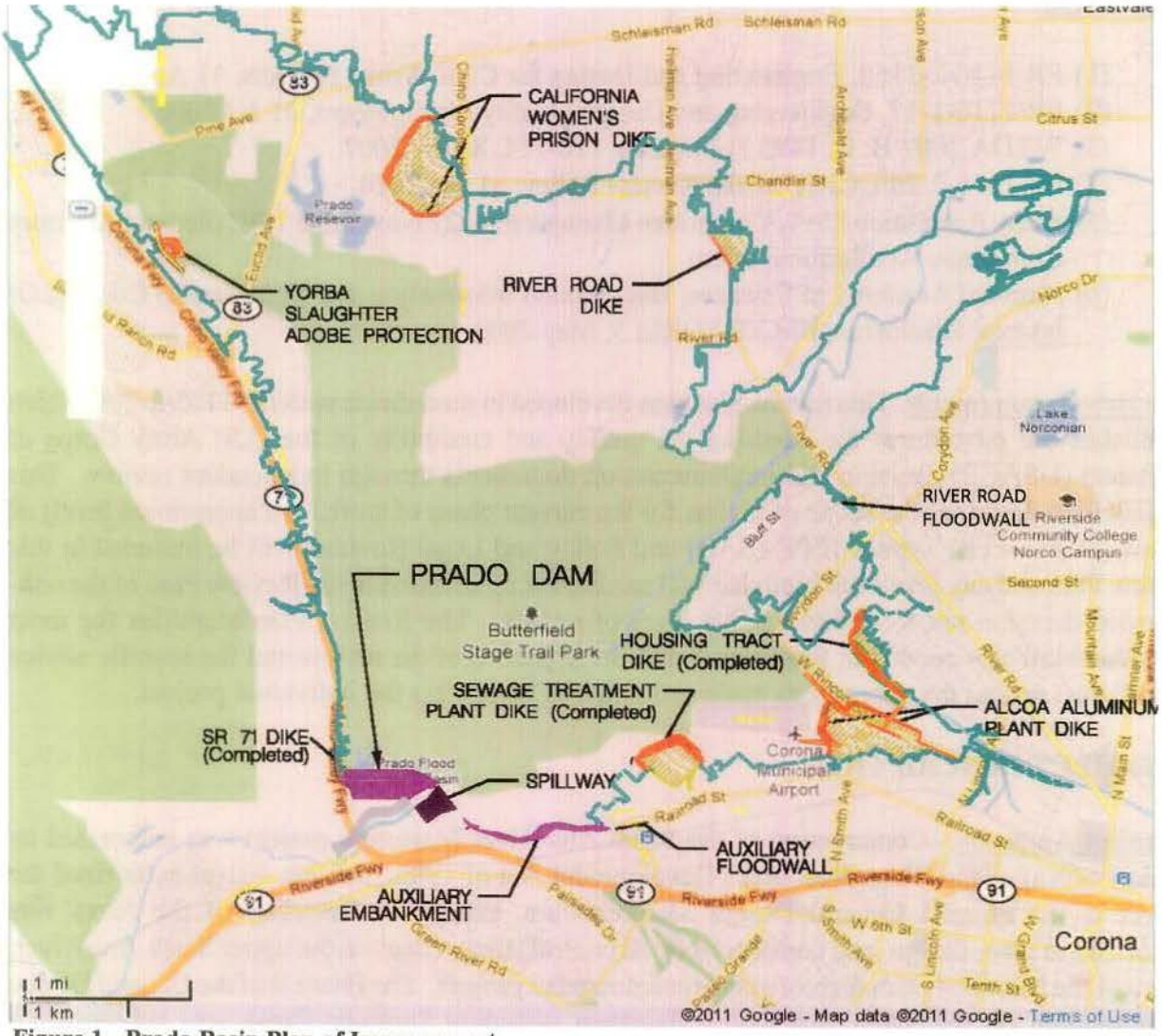

Figure 1 - Prado Basin Plan of Improvements

Dike at Corona Sewage Treatment Plant. Within the proposed new reservoir taking line lies an existing sewage treatment plant owned by the City of Corona. This sewage treatment plant is located west of Butterfield Park and southwest of Corona Airport on 49 acres of land that is owned by the U.S. Government. The land has been leased to the City since 1967. Treatment facility components include sedimentation tanks, aeration tanks, digesters, control buildings, and drying beds.

The construction of the Corona Sewage Treatment Plant Dike protects the treatment facility from potential future flooding. The dike is 3,470 feet in length, 280 feet in base width, and ranges from 0 to 53 feet in height and includes a recreational feature on a 30-foot wide bench approximately 10 feet from the toe of the dike. The recreational feature is a segment of the proposed Santa Ana River Trail, a tandem bikeway and riding and hiking trail for non-motorized bicycle, equestrian, and pedestrian use. Implementation of this segment of the Santa Ana River Trail will advance the Santa Ana River National Recreational Trail Master Plan and is expected to be open for public use once other remaining segments of the trail within Riverside County are constructed.

Dike at Corona National Housing Tract. The existing residential housing development is located within the City limits of Corona, on the outskirts of the southeastern portion of the Prado Dam reservoir. A significant portion of private property along Meadowview Street and Greenbrier Avenue and public roads are situated below an elevation that would require flood protection due to the raising of the Prado Dam.

The construction of the Corona National Housing Dike provides the necessary flood protection. The dike is roughly 3,600 feet in length, 150 feet in base width, and ranges up to 24 feet in height. The elevation of the top of the dike varies slightly but is not appreciably higher than the adjacent residential building pads. Final landscape and irrigation of the landward slope face of the dike and interior open space areas was conducted as part of separate design and construction contracts.

c. Project History. The Plans and Specifications for the Corona Sewage Treatment Plant Dike and the Corona National Housing Tract Dike were completed in 2007 using the Phase II SARM GDM as the basis of design. A contract in the amount of $11,865,452 was awarded to Stronghold Engineering Inc. in February 2007 for the construction of the Sewage Treatment Plant Dike and the National Housing Tract Dike and was completed in 2009. In addition, a contract in the amount of $958,335 for construction of the landscaping features was awarded to Hal Hays Construction in September 2009 and was completed in June 2011. The projected cost estimate for the modifications to both the Housing and Sewage Treatment Plant Dikes necessary to address the SPRA comments will be in the 3 to 4 million range. The Total Project Cost estimate for both dikes is currently under development.

In December 2009, The Corps' Screening for Portfolio Risk Assessment (SPRA) team issued a report on their review of dam safety issues associated with the Prado Dam project. Significant concerns over the design and construction of the Corona Housing Dike and the Corona Treatment Dikes at Prado Dam were discussed at the January 2010 Senior Oversight Group review of SPRA projects, and two primary issues were identified at the meeting. The first issue concerns the construction quality of the embankment itself; the second issue concerns the design not meeting

current dam safety guidance. Both of these issues led to "Inadequate" ratings for embankment and conduit features and thus categorized the two dikes as DSAC II dams (Urgent – Unsafe or Potentially Unsafe) after being evaluated through the SPRA process. The outstanding issues we expect to address with the proposed project documents are:

1. Dike crest elevation,
2. Incomplete documentation,
3. Design deficiencies,
4. Potential design deficiencies and
5. Recommended course of action.

3. WORK PRODUCTS TO BE REVIEWED

a. Description of Work Products. The work products for this project include the finalized Design Documentation Report for the Sewage Treatment Plant Dike and the National Housing Tract Dike (also referred to together as the Corona Dikes), Modification Plans & Specifications, and an Operation & Maintenance Manual. A brief description of each work product is provided below.

Finalized Design Documentation Report. The Design Documentation Report for the Corona Dikes will serve as a summary of the design used by the PDT in developing the contract plans and specifications. It will contain a full record of design decisions, assumptions and methods, subsequent to the Phase II GDM.

Plans and Specifications. Modification plans will be developed to address any deficiencies identified by the SPRA and corrective requirements identified during this review process.

Operation and Maintenance Manual. SPL will prepare the Operation and Maintenance manual after the modification construction is completed. The project will then be turned over to the local sponsor for maintenance.

b. Required Level of Review. Design products including a Design Documentation Report (DDR), contract Plans and Specifications (P&S) for modification work, and the Operation and Maintenance (O&M) Manual will all undergo DQC, ATR, and an Type II IEPR (SAR) review. The DDR shall undergo the Quality Control & Consistency (QCC) review. The QCC review is proposed in light of the fact that the recently constructed structures received the DSAC II rating and this report and P&S is intended to address the deficiencies identified.

c. Authorization & Reference Materials. Electronic versions of the documents, including the Phase II General Design Memorandum, dated August 1988, Contract Plans and Specifications, and all relevant information available shall be posted in Adobe Acrobat PDF format for the ATR Reviewers, the Type II IEPR (SAR) panel, and the QCC panel members to review.

4. SCOPE OF REVIEW

a. District Quality Control. District Quality Control activities for the Design Documentation Report and Plans & Specs will consist of Quality Checks and Reviews supervisory reviews, Project Delivery

Team (PDT) reviews including input from the Local Sponsor, and BCOE reviews, as required by the District's Quality Manual.

b. Agency Technical Review. Agency Technical Review (ATR) is undertaken to "ensure the quality and credibility of the government's scientific information" in accordance with ER 1110-1-12. In order to insure incorporation of COE national experience for Flood Risk Management Projects (as updated per post-Katrina investigations), and in addition to the DQC, an ATR will also be performed. Moreover, all provisions and checklists for Safety Assurance Review (SAR) contained in EC 1165-2-209 will be incorporated into the charge to the ATR team.

ATR Objective. The ATR shall focus on compliance with established policy, principles and procedures using clearly justified and valid assumptions. It includes the verification of assumptions, methods, procedures, and material used in analyses based on the level of complexity of the analysis. The ATR should verify the alternatives evaluated, appropriateness of data used, level of data obtained, functionality of the project and verify the reasonableness of the results including whether the project meets the customer's needs consistent with law and existing policy and engineering and scientific principles. The ATR should also determine if the proposed alternative is feasible, safe, functional, constructible, and environmentally sustainable within the Federal interest, and whether the concepts and project costs are valid. The final review will confirm whether all relevant engineering and scientific disciplines have been effectively integrated and that the content is sufficiently complete for the current phase of the project. The ATR team should also ensure that the design satisfies all of the concerns that were raised at the January 2010 Dam Safety Senior Oversight Group review of SPRA projects.

Responsibilities.

(1) ATR Team responsibilities are as follows:

(a) Reviewers shall review project authorization material and the design documents to confirm that work was done in accordance with established professional principles, practices, codes, and criteria and for compliance with laws and policy. Comments on the design documents shall be submitted into DrChecks.

(b) Reviewers shall pay particular attention to one's discipline but may also comment on other aspects as appropriate. Reviewers that do not have any significant comments pertaining to their assigned discipline shall provide a comment stating this.

(c) Grammatical and editorial comments shall not be submitted into DrChecks. Comments should be submitted to the ATR manager via electronic mail using tracked changes feature in the Word document or as a hard copy mark-up. The ATR manager shall provide these comments to the Study Manager.

(d) Review comments shall contain these principal elements:

- a clear statement of the concern – identify the product's information deficiency or

incorrect application of policy, guidance, or procedures;

- the basis for the concern, such as law, policy, or guidance – cite the appropriate law, policy, guidance, or procedure that has not been properly followed;
- significance for 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
- specific actions needed to resolve the comment – identify the action(s) that the PDT must take to resolve the concern.

(e) The "Critical" comment flag in DrChecks shall not be used unless the comment is discussed with the ATR manager and/or the Technical Project Leader first.

(2) PDT Team responsibilities are as follows:

(a) The team shall review comments provided by the ATR TEAM in DrChecks and provide responses to each comment using "*Concur*", "*Non-Concur*", or "*For Information Only*". *Concur* responses shall state what action was taken and provide revised text from the report if applicable. *Non-Concur* responses shall state the basis for the disagreement or clarification of the concern and suggest actions to negotiate the closure of the comment.

(b) Team members shall contact the PDT and ATR Team managers to discuss any "Non-Concur" responses prior to submission.

c. Independent External Peer Review (Safety Assurance Review).

(1) General. Per EC 1165-2-209, a Type II Safety Assurance Review shall be conducted on design and construction activities when a project:

- addresses hurricane and storm risk management or flood risk management;
- involves existing and potential hazards that pose a significant threat to human life;
- uses innovative materials or techniques;
- lacks redundancy, resilience, or robustness in the design; or has unique construction sequencing or a reduced or overlapping design/construction schedule.

This applies to new projects and to the major repair, rehabilitation, replacement, or modification of existing facilities. External panels will review the design and construction activities prior to initiation of physical construction and periodically thereafter until construction activities are completed.

It is proposed that the Sewage Treatment Plant and Housing Tract Dikes undergo the Safety Assurance Reviews (SAR). The objective of this review would be to assess, analyze, interpret, and evaluate design/engineering and construction criteria for the Prado Dam

features during design and construction phases of the project.

(2) Type II IEPR (SAR) Methodology.

During the Design Phase, panel members shall evaluate/review the design submittals and provide their comments in DrChecks. The design submittals will be at various stages of completion, as defined in the feature appendices. Panel members will address key features and components to validate the state of the art approach being used to design and construct the system. To insure that an appropriate level of review is obtained, panel members will also review the models used in the development of the design. Civil 3Dimensional software used includes: MicroStation and Inroads. H&H analysis utilitized: HEC-1 and HEC-RAS. Geotechnical analysis used the following models: Seep-W and Slope-W. Structural analysis used the following models: CUFRBC and CTWALL. Cost analysis plans to use the following: MCACES Version 4.1 and a formal CSRA utilizing the Crystal Ball software will be provided.

For the Construction Phase, the Type II IEPR (SAR) shall evaluate/review construction activities to assure that the design assumptions made during the design phase remain valid through construction. The Panel shall visit the construction site for a 2-day trip to include the appropriate peer reviewers for the progress of construction to review critical construction operations. The visits should coincide with the mid points of construction and shall be documented with a Field Visit Report. The Field Visit reports will include a check list, photographs, and text summarizing observations and information noted during each site visit. The Field Visit Reports shall be included in the Construction Final Report as an appendix. Operations and Maintenance Manuals will also be subjected to Type II IEPR (SAR). The panel member selection will be re-evaluated for the review of the Operations and Maintenance Manual.

The EC 1165-2-209 will be used to manage and develop the charges for the Type II IEPR (SAR) panels. The results of the ATR will be provided to the Type II IEPR (SAR) panels. The charges to the Type II IEPR (SAR) panels will complement the ATR process and not duplicate it. The following excerpt from Appendix E of the draft EC is included as the basis for this methodology.

"the intent of the reviews is to complement the existing process and to avoid impacts to program schedules and cost. Where appropriate and reasonable, the District can conduct the ATR and SAR concurrent and in concert if it enhances the review process. Every effort should be made to avoid having the SAR duplicate the ATR."

To insure independence and to obtain the required expertise, the Type II IEPR (SAR) panel members will be acquired via the A/E process or with an Army Research Office eligible organization such as Battelle Memorial Institute. Panel members will submit and comply with National Academy of Sciences, Background Information and Confidential Conflict Of Interest Disclosure, BI/COI FORM 3, May 2003.

(3). Type II IEPR (SAR) Questions.

The Type II IEPR (SAR) Panels will confirm that ATR has addressed the above questions and will address the following questions as part of their reviews.

- Do the assumptions made during the decision document phase for hazards remain valid through the completion of design as additional knowledge is gained and the state-of-the-art evolves?

- Do the project features adequately address redundancy, robustness, and resiliency with an emphasis on interfaces between structures, materials, members, and project phases?

- Do the assumptions made during design remain valid through construction?

- For O&M manuals, do the requirements adequately maintain the conditions assumed during design and validated during construction; and will the project monitoring adequately reveal any deviations from assumptions made for performance? The Panel Member assigned this review will be determined near the mid-point of the construction period.

d. Quality Control and Consistency Review. The Quality Control and Consistency Review (QCC), performed by the Risk Management Center (RMC), will provide a detailed review of the design development and subsequent construction of the two dike features to ensure consistency and adherence to Corps policy. The QCC panel will be looking at the adequacy of discussion of the design analyses and potential failure modes, risk analyses, evaluation and rationale for selection of the recommended design.

5. REVIEW TEAM

a. Review Management. The DQC review is managed within SPL. For this project, the RMO is the RMC, with FMR-PCX coordination, for all work products.

b. District Quality Control. Reference is made to the Quality Management Plan that identifies the activities, roles, and responsibilities for the DQC of this project.

c. Agency Technical Review. The ATR team will be established per ER 1110-1-12 and EC 1165-2-209. The Corps will manage the ATR internally and it will be conducted by individuals and organizations that are separate and independent from those that accomplished the work, in accordance with policy. 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 USACE commands; contractors;

academic or other technical experts; or a combination of the above. The ATR Team Leader will be a Corps of Engineers employee outside the South Pacific Division. The required disciplines for the Corona National Housing Tract Dike and Corona Sewage Treatment Plant Dike project are described below:

Hydrology and Hydraulics. The team member should be a registered professional with 10 or more years experience in conducting and evaluating hydrologic and hydraulic analyses for flood risk management projects. Experience with all aspects of hydraulic engineering including: hydraulic analyses and designs for spillways, outlets, stilling basins, approach channels, and diversion structures; water velocities, pressures, directions, trajectories, and erosion potential; and hydraulic modeling is desired. Experience with the Dam or Levee Safety program is also desired. Active participation in related professional societies is encouraged.

Geotechnical Engineering. The team member should have 20 or more years experience in geotechnical engineering in high seismicity regions. Team member must demonstrate significant experience in the geotechnical aspects of analysis, design, and construction of flood risk management structures including earthen dams, floodwalls, and closure structures. Specific required earthen dam design experience includes assessing soil properties, static and dynamic slope stability, seepage analysis, deformation analyses, filter design, slope protection design, preparation of plans/specifications, and instructions to field personnel. Required earthen dam construction experience includes: diversion and control of water, foundation treatment and improvement, borrow operations, compaction and moisture conditioning methods, evaluating QA/QC and record test data, and evaluating earthwork construction and differing site condition claims.

Structural Engineering. The team member should have 10 or more years experience in structural engineering. Experience needs to include design and evaluations of large complex hydraulic structures associated with flood risk management projects. Experience with AASHTO and state road and bridge standards as well as practical knowledge of construction methods and techniques as it relates to structural portions of projects is encouraged.

Cost Engineering. The team member should have 10 or more years demonstrated in the preparation of cost estimates, cost risk analyses, and cost engineering. Experience is needed for complex Civil works projects to include levee and culvert systems. Reviewer shall be certified as a Cost ATR Reviewer by the Walla Walla DX, which requires an 8 hour training and signed certificate.

Civil Engineering. The team member should have 10 or more years experience with large scale civil/site work projects to include levee systems, floodwalls, roads and highways, relocations, paving and drainage.

ATR Team Leader. The ATR Team Leader should have 10 or more years experience with Civil Works Projects and have performed ATR Team Leader duties on complex civil works projects.

d. Type II IEPR (SAR) Panels and Members. To insure independence and to obtain the required expertise, the Type II IEPR (SAR) panels will be made up of independent, recognized experts from

outside of the USACE in the appropriate disciplines, representing a balance of areas of expertise suitable for the review being conducted. Panel members will be acquired via the A/E process or with an Army Research Office eligible organization. Panel members will submit and comply with National Academy of Sciences, Background Information and Confidential Conflict Of Interest Disclosure, BI/COI FORM 3, May 2003.

The Type II IEPR (SAR) panel should be comprised of members with the following expertise:

Hydrology and Hydraulics (H&H) Panel Member. The H&H Panel Member should be a registered professional from academia, a public agency, or an Architect-Engineer or consulting firm with 15 or more years experience in conducting and evaluating hydrologic and hydraulic analyses for flood risk management projects. The Panel Member should be experienced in Flood Damage Reduction Projects, including large earth-fill, rock-fill, concrete or combination dams or systems of dams with their many hydraulic appurtenances such as gated and un-gated spillways, stilling basins, outlet works, control gates and valves, power intake structures, tunnels, conduits and approach and diversion channels and appurtenant control structures; and/or Local Flood Damage Reduction Projects including levees; floodwalls; gravity outlet and gate closure structures; pumping stations; detention basins; storm drainage structures; lined and unlined flood control channels and improvement structures. Active participation in related professional societies is encouraged.

Geotechnical Engineering Panel Member. The Geotechnical Engineering Panel Member should be a registered professional from academia, a public agency, or an Architect-Engineer or consulting firm with 20 years or more experience in geotechnical and earthquake engineering for critical flood risk management infrastructure and dam safety evaluations. The panel member should be a recognized expert in the geotechnical analysis and design of earthen dams and floodwalls, have experience in preparation of contract specifications, and demonstrate significant experience in the construction and safety evaluation of earthen dams.

Structural Engineering Panel Member. The Structural Engineer should be a registered professional from academia, a public agency, or an Architect-Engineer or consulting firm with extensive experience in design of hydraulic structures for large and complex civil works projects including floodwalls and drainage features, etc. Designs may involve unusual stresses because of size and shape, loading conditions resulting from unbalanced earth pressures, settlement, and creeping of earth fills.

Civil Engineering Panel Member. The Civil Engineer should be a registered professional from academia, a public agency, or an Architect-Engineer or consulting firm with extensive experience in design of major flood control structures including earthen dams, levees, guide dikes and channels. Experience utilizing riprap protection, soil cement or concrete in design of levees, guide dikes and channels for large civil works projects is required. Practical knowledge of construction methods and techniques as it relates to these types of projects including earthwork, erosion control, hydraulic structures, interior drainage, site grading, roadwork, and concrete work is encouraged.

e. QCC Panel and Members. To insure independence and to obtain the required expertise, the QCC

panel will be made up of independent, recognized experts experienced with Dam Safety and with broad engineering backgrounds. These members should have a thorough understanding of dam failure modes and a thorough understanding of case histories. The members will be chosen by the RMC.

f. Team Roster. The teams for this project will be comprised of the following individuals:

Project Delivery Team (PDT)

Discipline/Role	Name	Agency/Office	Phone No.
Project Team Leader	Santiago Munoz	CESPL-ED-DB	(213) 452-3668
SPL Project Manager	Thomas Bucklew	CESPL-PM-I	(213) 280-9511
Civil Engineer	Linh Do	CESPL-ED-DB	(213) 452-3666
Geotechnical Engineer	Douglas Chitwood	CESPL-ED-GD	(213) 452-3587
Materials Engineer	Francis Omoregie	CESPL-ED-GD	(213) 452-3599
Hydraulic Engineer	Reuben Sasaki	CESPL-ED-HH	(213) 452-3672
Structural Engineer	Gonzalo Galvan	CESPL-ED-SD	(213) 452-3697
Cost Engineer	Juan Dominguez Don Nguyen (Alternate)	CESPL-ED-DD	(213) 452-3737 (213) 452-3695
Landscape Architect	Sandra Willis	CESPL-ED-DA	(213) 452-3638
Environmental Specialist	Hayley Lovan	CESPL-PD-RQ	(213) 452-3863

District Quality Control Team (DQC)

Discipline/Role	Name	Agency/Office	Phone No.
Civil Engineer	Roxanne Viduarre	CESPL-ED-DA	(213) 452-3643
Geotechnical Engineer	Chris Spitzer	CESPL-ED-GD	(213) 452-3562
Materials Engineer	Chris Spitzer	CESPL-ED-GD	(213) 452-3562
Hydraulic Engineer	Van Crisostomo	CESPL-ED-HH	(213) 452-3558
Structural Engineer	Tony Wong	CESPL-ED-DS	(213) 452-3700
Cost Engineer	Phillip Eng	CESPL-ED-DD	(213) 452-3744
Dam & Levee Safety	Mike Vahabzadeh	CESPL-ED-SG	(213) 452-3613
Environmental Specialist	TBD		
Construction Engineer	TBD		

ATR Team

Discipline/Role	Name	Agency/Office	Phone No.
ATR Team Leader			
Civil Engineer			
Geotechnical Engineer			

Hydraulic Engineer			
Structural Engineer			
Cost Engineer			
Environmental Specialist			
SPRA Cadre Member			
SPRA Cadre Member			
SPRA Cadre Member			

Type II IEPR (SAR) Panel

Discipline/Role	Name	Agency/Office	Phone No.
Hydraulic Engineer			
Geotechnical Engineer			
Structural Engineer			
Civil Engineer			
Environmental Specialist			

QCC Panel

Discipline/Role	Name	Agency/Office	Phone No.
RMC assigned Member			
RMC assigned Member			
RMC assigned Member			
RMC Director	Nathan Snorteland	RMC	(571) 232-9189
District DSO	Richard Leifield	CESPL-ED	(213) 452-3629

6. PUBLIC COMMENT To ensure that the peer review approach is responsive to the wide array of stakeholders and customers, both within and outside the Federal Government, this Review Plan will be published on the district's public internet site following approval by SPD at http://www.spl.usace.army.mil/Missions/CivilWorks/ReviewPlans.aspx. This is not a formal comment period and there is no set time frame for the opportunity for public comment. If and when comments are received, the PDT will consider them and decide if revisions to the review plan are necessary. The public is invited to review and submit comments on the plan as described on the web site.

7. REVIEW SCHEDULE

Based on SPL's commitment to executing the SARM schedule for design and construction, milestones for the ATR and Type II IEPR (SAR) processes have been determined and are documented below. Furthermore, there are other Prado features that are currently in the design phase. They are listed here to help synchronize review activities. The Women's Prison Dike is

currently at a 70% level of design and would be scheduled to undergo ATR review around in March 2013. The Alcoa Dike project is currently at a 60% level of design and would be scheduled to undergo ATR toward the end of FY13. The Corona Dikes project is projected for construction in FY13; therefore, the actual dates may have to be adjusted once the period draws closer.

a. ATR Schedule. The ATR process for the Corona Dikes will follow the following timeline. Actual dates may have to be adjusted once the period draws closer.

Review Plan Approved by RMO (SPD)	30Jan13
SPD designates ATR team and coordination begins	30Jan13 – 15Feb13
Finalized Design Documentation Report	
Submittal of DDR to ATR/Cadre	1Apr13
Comment Resolution Meeting, (if required)	11May13
Incorporate Comments and Resubmit	1May13 – 15May13
ATR Complete Backcheck	18May13 – 22May13
ATR Certification	27May13
Design Documentation Report Approved	5Aug13

Modification Plans and Specifications	
Prepare Draft	4Mar13
District Quality Control Review	7Mar13 – 17Mar13
Submittal of P&S to ATR	1Apr13
Comment Resolution Meeting, (if required)	11May13
Incorporate Comments and Resubmit	1May13 – 15May13
ATR Complete Backcheck	18May13 – 22May13
ATR Certification	27May13
BCOE Certification Complete	22Jul13
Plans and Specifications Approved	5Aug13
Advertise Construction Contract	12Aug13
Open Bids	17Sep13
Construction Contract Award	5Oct13

O&M Manual	
Submittal of O&M Manual	Nov 2013
District Quality Control Review of O&M Manual	Dec 2013
ATR Review	Jan 2014
ATR Complete Back Checking	Feb 2014
ATR Certification	Feb 2014

b. Type II IEPR (SAR) Schedule. The Type II IEPR (SAR) process will follow the following timeline. Actual dates may have to be adjusted once the period draws closer.

Type II IEPR (SAR) Procurement	
Design Documentation Report	
Submittal of DDR to Type II IEPR (SAR)	15May13
Type II IEPR (SAR) Review	18May13 – 5Jun13

Type II IEPR (SAR) Review Complete Backcheck	22Jun13 – 26Jun13
SPD Approval of SAR Responses	15Jul13

Plans and Specifications	
Submittal of Final P&S Package	15May13
Type II IEPR (SAR) Review	18May13 – 5Jun13
Type II IEPR (SAR) Complete Backcheck	22Jun13 – 26Jun13
SPD Approval of SAR Responses	15Jul13
Construction Contract Award	5Oct13
Midpoint Construction	Nov2013
Construction Completion	Dec2013

c. QCC Schedule. The QCC process will commence following with the ATR & Type II IEPR (SAR) reviews, which follow the timeline below. Actual dates may have to be adjusted once the period draws closer.

QCC Panel Establishment	
Design Documentation Report	
Submittal of DDR to QCC	22Jun13
QCC Review & Coordination	22Jun13 – 17Jul13
Incorporate Comments & Resubmittal	20Jul13 – 24Jul13
QCC Outbrief	30Jul13

d. ATR Funding. The Los Angeles District will provide labor funding by cross charge labor codes. Funding for travel, if needed, will be provided by way of a government order. The Project Manager will work with the ATR team leader to ensure that adequate funding is available and is commensurate with the level of review needed. For general budgeting forecasting, it was anticipated that each ATR reviewer would require 80 hours (at $150 per hour) to fulfill their review task, for a total ATR Review effort estimated to be approximately $120,000. ATR review will be cost shared in accordance with EC 1165-2-209. Any funding shortages will be negotiated on a case by case basis and in advance of a negative charge occurring.

The ATR team leader shall provide organization codes for each team member and a responsible financial point of contact (CEFMS responsible employee) for creation of labor codes. Reviewers shall monitor individual labor code balances and alert the ATR team leader to any possible funding shortages.

e. Type II IEPR (SAR) Funding. The FRM-PCX will identify someone independent from the PDT to scope the Type II IEPR (SAR) and develop an Independent Government Estimate. It is anticipated that the total cost for the Type II IEPR (SAR) identified within this plan will be approximately $150,000; all are project costs that will be cost shared accordance with EC 1165-2-209. These costs will cover costs for their review of the designs, the construction and travel. The Los Angeles District will provide the funding to the Type II IEPR (SAR) panel and the FRM-PCX. The number of panel members proposed for the Type II IEPR (SAR) will be listed in the feature appendix. It is not anticipated that the public, including scientific or professional societies, will ask to nominate

potential external peer reviewers.

8. DOCUMENTATION OF REVIEW

a. ATR Communication and Documentation. The communication and documentation plan for the ATR is as follows:

(1) The team will use Document Review and Checking System (DrChecks) to document the ATR process. The Technical Project Leader will facilitate the creation of a project portfolio in the system to allow access by all PDT and ATR TEAM members. An electronic version of the documents, appendices, and any significant and relevant public comments shall be posted in Adobe Acrobat PDF format on a secure ftp site at least one business day prior to the start of the comment period.

(2) The PDT shall send the ATR team leader one hard copy of the documents for each ATR team member such that the copies are received at least one business day prior to the start of the comment period.

(3) The PDT shall host an ATR kick-off meeting virtually to orient the ATR team during the first week of the comment period. If funds are not available for an on-site meeting, the PDT shall provide a presentation about the project, including photos of the site, for the team.

(4) The Technical Project Leader shall inform the ATR team leader when all responses have been entered into DrChecks and conduct a briefing to summarize comment responses to highlight any areas of disagreement.

(5) A revised electronic version of the documents with comments incorporated shall be posted on a secure ftp site for use during back checking of the comments.

(6) PDT members shall contact ATR team members or leader as appropriate to seek clarification of a comment's intent or provide clarification of information in the report. Discussions shall occur outside of DrChecks but a summary of discussions may be provided in the system.

(7) Reviewers will be encouraged to contact PDT members directly via email or phone to clarify any confusion. DrChecks shall not be used to post questions needed for clarification.

b. ATR Resolution.

(1) Reviewers shall back check PDT responses to the review comments and either close the comment or attempt to resolve any disagreements. Conference calls shall be used to resolve any conflicting comments and responses.

(2) Reviewers may "agree to disagree" with any comment response and close the comment with a detailed explanation. If reviewer and responder cannot resolve a comment, it should

be brought to the attention of the ATR team leader and, if not resolved by the ATR team leader, it should be brought to the attention of the Engineering chief who will need to sign the certification. ATR Team members shall keep the ATR team leader informed of problematic comments. The vertical team will be informed of any policy variations or other issues that may cause concern during HQ review.

c. ATR Certification. To fully document the ATR process, a statement of technical review will be prepared for each product reviewed. Certification by the ATR team leader and the Technical Project Leader will occur once issues raised by the reviewers have been addressed to the review team's satisfaction. Indication of this concurrence will be documented by the signing of a certification statement.

d. Type II IEPR (SAR) Communication and Documentation. The communication and documentation plan for the Type II IEPR (SAR) is as follows:

(1) The panel will use DrChecks to document the Type II IEPR (SAR) process. The Technical Project Leader will facilitate the creation of a project portfolio in the system to allow access by all PDT and the outside eligible organization (OEO). An electronic version of the documents, appendices, and any significant and relevant public comments shall be posted on a secure ftp site at least one business day prior to the start of the comment period.

The OEO will compile the comments of the Type II IEPR (SAR) panelists, enter them into DrChecks, and forwards the comments to the District. The District will consult the PDT and outside sources as necessary to develop a proposed response to each panel comment. The District will enter the proposed response to DrChecks, and then return the proposed response to the panel. The panel will reply to the proposed response through the OEO, again using DrChecks. This final panel reply may or may not concur with the District's proposed response and the panels final response will indicate concurrence or briefly explain what issue is blocking concurrence. There will be no final closeout iteration. The District will consult the vertical team and outside resources to prepare an agency response to each comment. The initial panel comments, the District's proposed response, the panels reply to the District's proposed response, and the final agency response will all be tracked and archived in DrChecks for the administrative record. However, only the initial panel comments and the final agency responses will be posted. This process will continue to be refined as experience shows need for changes.

(2) The PDT shall send each Type II IEPR (SAR) panel member one hard copy (with color pages as applicable) of the document and appendices such that the copies are received at least one business day prior to the start of the comment period.

(3) The Technical Project Leader shall inform the Type II IEPR (SAR) panel when all responses have been entered into DrChecks and conduct a briefing to summarize comment responses to highlight any areas of disagreement.

(4) A revised electronic version of the documents with comments incorporated shall be

posted on a secure ftp site for use during back checking of the comments.

(5) PDT members shall contact Type II IEPR (SAR) panel members as appropriate to seek clarification of a comment's intent or provide clarification of information in the report. Discussions shall occur outside of DrChecks but a summary of discussions may be provided in the system.

(6) The Type II IEPR (SAR) panel shall produce final Review Reports, including documentation of the peer review of the Project Design and field visit reports on construction activities.

e. QCC Outbrief. Upon completion of the review process, the RMC will provide a recommended course of action and based on the results of the study the DSAC class is reviewed and modified as appropriate. The report should also provide determinations whether the recommendations in the reports and the supporting analyses and coordination comply with policy.

9. POINTS OF CONTACT. Questions about this Review Plan may be directed to the Los Angeles District Project Delivery Team, Design Lead Supervisor, Mr. Stephen H. Vaughn at (213) 452-3654, or to the Project Manager for the Santa Ana Mainstem Project, Mr. Oscar T. Bucklew at (213) 280-9511. The Chief, Engineering Division is Mr. Richard J. Leifield, PE at (213) 452-3629. Inquiries to the MSC should be directed to Paul Bowers at (415) 503-6556.

10. REVIEW PLAN APPROVAL. In summary, the Los Angeles District proposes to fully comply with all existing guidance, to add ATR and conduct Type II IEPR (SAR) in accordance with EC 1165-2-209. Approval of this plan as outlined above will help facilitate the District's completion of the Santa Ana Mainstem Project – Prado Dam features within the authorized schedule. Once the Review Plan is approved, the District will post it to its district public website and notify SPD. If necessary, any changes to the review plan will be approved by following the process used for initially approving the plan.

The Los Angeles District requests that the South Pacific Division endorse the above recommendations and approve this Review Plan as described in Appendix B of EC 1165-2-209.

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