DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MISSISSIPPI VALLEY DIVISION
P.O. BOX 80
VICKSBURG, MISSISSIPPI 39181-0080

CEMVD-RB

24 Sept 2019

MEMORANDUM FOR Commander, MVN

SUBJECT: Approval of the Review Plan for Inner Harbor Navigation Canal Lock, 2019 Northeast and Southwest Dolphin Replacements

1. References:

a. Memorandum, CEMVN-EDS, 2 July 2019, subject: Implementation Review Plan for Inner Harbor Navigation Canal Lock, 2019 Northeast and Southwest Dolphin Replacements (encl).

b. EC 1165-2-217, Review Policy for Civil Works, 20 February 2018.

2. The enclosed Review Plan (RP) for the Inner Harbor Navigation Canal Lock, 2019 Northeast and Southwest Dolphin Replacements has been prepared in accordance with EC 1165-2-217 and has been coordinated with MVD staff and the Inland Navigation Design Center, who concurred with the RP.

3. The MVD hereby approves this RP, which is subject to change as circumstances require, consistent with project development under the Project Delivery Business Process. Non-substantive changes to this RP do not require further approval. Substantive revisions to this RP or its execution will require new written approval from this office. The district should post the approved RP to its internal website with sensitive information removed.

4. The MVD point of contact for this action is Nicole Harris, CEMVD-PDM, (601) 634 5829.

BUILDING STRONG and Taking Care of People!

[redacted]

Encl

THOMAS A. HOLDEN, JR., P.E., SES
Director, Regional Business
Mississippi Valley Division

US Army Corps of Engineers

Prepared by:

New Orleans District
Mississippi Valley Division

GIWW – Gulf Intracoastal Waterway
Inner Harbor Navigation Canal Lock (IHNC)
2019 Northeast and Southwest Dolphin Replacements, Orleans Parish Louisiana
Review Plan

PREPARED BY:

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Chief, Business Technical Division

[redacted]

THOMAS A. HOLDEN, JR., P.E., SES
Director, Regional Business
Mississippi Valley Division

24 Sept 2019

This information is distributed solely for the purpose of pre-dissemination review under applicable information quality guidelines. It has not been formally disseminated by USACE. It does not represent and should not be construed to represent any agency determination or policy.

Section 1
Introduction

1.1 Purpose

This Review Plan (RP) for Inner Harbor Navigation Canal (IHNC) Lock, 2019 Northeast and Southwest Dolphin Replacements will help ensure a quality engineering project is developed by the Corps of Engineers in accordance with EC 1165-2-217, “Review Policy for Civil Works”. As part of the Project Management Plan this RP establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products. It 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), 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 there is minimal life safety risk associated with failure of either of the two new concrete bull nose dolphins replacing the existing dolphins at the northeast and southwest ends of IHNC Lock. Therefore a Type II IEPR/Safety Assurance Review (SAR) will not be required (see Paragraph 6.3).

1.2 References

- EC 1165-2-217, Review Policy For Civil Works, 20 February 2018
- ER 1110-1-12, Quality Management, 31 Mar 2011
- ER 1110-1-12, Change 2, Quality Management, 31 March 2011
- ER 415-1-11, Biddability, Constructability, Operability, Environmental and Sustainability (BCOES) Reviews, 1 January, 2013
- QMS Process 22800- MVN Quality Control (QC) for USACE Prepared E&D Products and Technical Engineering Work Items

1.3 Review Management Organization

The RMO is responsible for managing the overall peer review effort described in this Review Plan. The RMO for this project is the Inland Navigation Design Center (INDC). The RMO will assure that an ATR team is assembled in accordance with this review plan. The RMO will review the ATR report and sign the accompanying completion statement at the completion of the final ATR

Section 2
Project Description

2.1 Project Description

The Inner Harbor Navigation Canal Lock was constructed by the Board of Commissioners, Port of New Orleans. Construction started May 1918 and was completed in February 1923. The lock is classed as a ship lock, and is located in the East Bank, Mississippi River Levee, at the riverward end of the Inner Harbor Navigation Canal. The lock and canal connect the Mississippi River with the Gulf Intracoastal Waterway and Lake Pontchartrain. The essential components of the lock structure consist of a 640-foot-long by 75-foot wide chamber, river and canal end gate bays, and approach channels with associated guidewalls and mooring dolphins.

The purpose of this contract is to replace two end cell dolphins with new reinforced concrete bull nose dolphins. The existing northeast end cell dolphin and 60 foot long timber guidewall will be replaced with one dolphin. The existing southwest end cell dolphin will be replaced by another dolphin in-line with the proposed concrete pontoon guidewall. The dolphins are U-shaped with six-foot thick parapet walls and six- foot thick pile founded slabs. The new dolphins will be standalone structures with vertical piles such that interference with the adjacent IHNC Lock structure, forebay, and other construction is mitigated. Based on historic hydrograph data at IHNC Lock, the structures will be constructed one foot below the lowest still water elevation, which will mitigate corrosion in the steel pipe piles. The proposed dolphin on the northeast corner will approximately match the top of sheet pile elevation of the existing end cell dolphin at EL 13.0 and will be made accessible by stairs connected to the forebay of the IHNC lock. The southwest dolphin will have a top of concrete at EL 23.0.

The condition of the existing timber guidewalls and end cell dolphins is in a state of heavy deterioration. Therefore, new and more robust concrete dolphins will be designed and constructed according to the requirements of EM 1110-2-2104, ACI 318, and updated USACE barge impact criteria developed in part by the University of Florida.

Section 3
Risk Informed Decisions on Appropriate Review

3.1 Project Risks

(1) Selection of design barge impact force
(2) Fabrication of partially submerged non-standard formwork.
(3) Demolition
(4) Impacts to Navigation during construction
(5) Construction Schedule
(6) Acquisition Strategy

3.2 Risk Analysis

To mitigate the risk of improper selection of the barge impact force, field readings were taken to measure average barge velocities. A review of historical tow data from LPMS was used to develop histograms of the distribution of various tow sizes. The data obtained was used to develop a probabilistic model to determine the appropriate barge impact force to use for design. The probabilistic model was developed through consultation with USACE experts from INDC to finalize the design.

In order to construct the partially submerged structures, non-standard formwork will have to be fabricated and installed below the water line. While this is atypical from normal in the dry construction techniques, similar structures have recently been constructed in the New Orleans District successfully. Lessons learned from these past projects will be implemented in the construction of the concrete dolphins.

The demolition of the existing structures and the construction of the new structures could result in damage to the existing concrete lock structure, which is approximately 100 years old. The existing northwest and southeast guidewalls and end cell dolphins are to remain intact throughout the entire duration of the construction work on the contracted northeast and southwest dolphins and guidewalls. The Contractor shall stage the work to allow for safe passage of vessels at all times through the channel area. Navigation industry will be consulted for the duration of the contract.

The existing dolphins will be removed and new dolphins will be constructed in the same location. Due to the proximity of barges passing the project site, navigation schedules have the potential to be impacted, resulting in economic loss. To mitigate the impacts to navigation, the contractor will coordinate construction activities with IHNC Lock personnel. Navigation delays are already built into the daily lock operations as the St. Claude Avenue Bridge and N. Claiborne Avenue Bridge normally lower down under set curfew times twice a day during working hours. The times are 6:30 a.m. – 8:30 a.m. and 3:30 p.m. – 5:45 p.m. The contractor will be given permission to work from the land side of the lock. However, navigation impacts may still occur during the construction process. The Value Engineering Study for guide wall programmatic review stated, "*What sets the more permanent structures apart from the semi-permanent timber structures comes when factoring in the collateral costs of navigation impacts. Based upon analysis provided to the VE team, the economic losses due to delays in lockages quickly overcome any differences in cost between the structure types during initial construction. These impacts are then repeated (and likely exacerbated) when timber guide walls have to be replaced in the future.*"

While there is no unique construction sequencing, the construction schedule could be at risk due to the impact of high river events on the construction of portions of the structure that are impacted by water

elevation. If this occurs, more progress meetings to develop solutions to mitigate delays to the project timeline.

While there is no unique construction sequencing, the contract involves heavy civil works construction over water, requiring experience working in similar environments. There is a risk that contractors ill-suited for the job may be awarded this contract. The project will plan to be advertised as an unrestricted request for proposal to invite more experienced and competitive contractors to bid on the job.

To mitigate these risks, all design methodology, and statistical analysis will undergo ATR review by technical experts identified by the Inland Navigation Design Center (INDC). Additionally, risk will be addressed through the completion of formal DQC, BCOES, and Supervisory reviews. The New Orleans Engineering, Operations and District Safety Officers will also review the plans and specifications to ensure requirements of EM 385-1-1 are met. These independent reviews will ensure project safety, quality, and performance.

Section 4
District Quality Control

4.1 Requirements

All implementation documents (including supporting data, analyses, reports, environmental compliance documents, water control manuals, etc.) shall undergo DQC in accordance EC 1165-2-217. MVN will manage the DQC reviews. The DQC reviews will not have a formal schedule, but will be certified and documented. See Attachment 4 for a sample certification sheet. All computations, drawings or sketches shall undergo a rigorous independent check as part of the standard Quality Control (QC) process. Quality checks may be performed by staff responsible for the work, such as supervisors, work leaders, team leaders, designated individuals from the senior staff, or other qualified personnel. However, they should not be performed by the same people who performed the original work, including managing/reviewing the work in the case of contracted efforts. Quality Checks include a review of the alternatives considered, schedules, budgets, means and methods of construction, and have lessons learned been considered. DQC is assuring the math and assumptions are correct by having a checker initial each sheet of the computations. Checking is accompanied by a red dot, check mark or similar annotation next to the item that has been checked. For drawings the checker shall place a red dot, check mark or similar annotation on each dimension/elevation, note or reference showing concurrence with the correctness of the information show. Additionally, the PDT is responsible to ensure consistency and effective coordination across all project disciplines during project design and construction management. See Attachment 1 for PDT and DQC members and disciplines.

4.2 Documentation

Documentation of DQC activities is required and will be implemented by the process linked/described in paragraph 4.1. The checked versions of the documents that undergo DQC will be scanned and made an appendix to the DDR.

4.3 DQC Schedule and Estimated Cost

Although DQC is always seamless, the following milestone reviews are schedule in Table 1. The cost for the DQC is approximately $10,000.

Project Phase/Submittal	Review Start Date	Review End Date
DQC Final P&S Review	2/25/19	4/29/2019

Table 1 DQC Schedule

Section 5
Agency Technical Review

5.1 Requirements

All implementation documents (including supporting data, analyses, reports, environmental compliance documents, water control manuals, etc.) shall undergo ATR in accordance EC 1165-2-217. ATR reviews will occur seamlessly at the scheduled milestones as shown in Section 5.75.7. A site visit will not be scheduled for the ATR Team.

5.1.1 Required ATR Team Expertise

ATR teams will be comprised of senior USACE personnel (Regional Technical Specialists (RTS), etc.), and may be supplemented by outside experts as appropriate. The disciplines represented on the ATR team will reflect the significant disciplines involved in the planning, engineering, design, and construction effort. This project will require review by structural engineers. Specifically, the ATR team shall have expertise related to design and fabrication of navigation lock components and hydraulic steel structures (HSS) such as gates. To assure independence, the leader of the ATR team will be outside of the MSC. A list of the ATR members and disciplines is provided below. The chief criterion for being a member of the ATR team is knowledge of the technical discipline.

5.2 General

ATR will be managed and performed outside of the New Orleans District. EC 1165-2-217 requires that the INDC is to serve as the RMO for this project. As required, there will be appropriate coordination and processing through CoPs, relevant PCXs, and other relevant offices to ensure that a review team with appropriate independence and expertise is assembled and a cohesive and comprehensive review is accomplished. The ATR shall ensure that the product is consistent with established criteria, guidance, procedures, and policy. The ATR will assess whether the analyses presented are technically correct and comply with published USACE guidance, and that the document explains the analyses and the results in a reasonably clear manner for the public and decision makers. Members of the ATR team will be from outside the New Orleans District. The ATR lead will be from outside the Mississippi River Valley Division.

5.3 Documentation of ATR

Documentation of ATR will occur using the requirements of EC 1165-2-217. This includes the four part comment structure and the use of DrChecks^{SM}. ATR may be certified when all ATR concerns are either resolved or referred to HQUSACE for resolution and the ATR documentation is complete. Certification of ATR should be completed, based on work reviewed to date, for the DDR and Plans and Specifications. A sample ATR certification form is included as Attachment 4.

5.4 Products to Undergo ATR

The 95% P&S and Design Documentation Report (DDR) will undergo ATR. While it is typically preferred to involve the ATR team at the front end of the design process, the design and fabrication of the concrete bull nose dolphins will be a replacement of similar existing end cell dolphins using improved and tested materials. Therefore, there are no innovative materials or construction techniques needed to complete the project. Also, members of the design team have recent experience with designing similar hydraulic concrete structures. No precedent will be set by this project.

5.5 Required Team Expertise and Requirements

ATR teams will be established in accordance with EC 1165-2-217.ATR teams will be comprised of senior USACE personnel (Regional Technical Specialists (RTS), etc.), and may be supplemented by outside experts as appropriate. The disciplines represented on the ATR team will reflect the significant disciplines involved in the planning, engineering, design, and construction effort. This project will require review by structural engineers. Specifically, the ATR team shall have expertise related to design and fabrication of navigation lock components and pile founded structures. To assure independence, the leader of the ATR team will be outside of the MSC. A list of the ATR members and disciplines is provided below. The chief criterion for being a member of the ATR team is knowledge of the technical discipline.

ATR Lead: 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, in this case, Structural Engineering or Geotechnical Engineering Subject Matter Expert (SME).

Structural Engineer – Reviewer shall be a senior level, professionally registered engineer and be proficient in design of reinforced concrete structures. The structural engineer shall have specialized experience in the design, construction and analysis of navigation structures. The Structural Engineer reviewer should have a minimum of 10 years of experience.

Geotechnical Engineer – Reviewer shall be a senior level, professionally registered engineer and be proficient in design of pile founded structures. The Geotechnical Engineer reviewer should have a minimum of 10 years of experience.

Construction Engineer – Reviewer shall be proficient in the construction of major civil works projects. The Construction reviewer should have a minimum of 10 years of experience.

5.6 Statement of Technical Review Report

At the conclusion of each ATR effort, the ATR team will prepare a review report with a completion and certification memo. The report will be prepared in accordance with EC 1165-2-217. The report will be submitted to the RMO for review and signature of the accompanying Statement of Completion of ATR. The district will then complete and sign a Certification of ATR. A sample Statement of Completion and Statement of Certification of ATR is provided in Attachment 5.

5.7 ATR Schedule and Estimated Cost

Although ATR is always seamless, the preliminary ATR milestone schedule is listed in Table 2. The cost for the ATR is approximately $30,000.

Project Phase/Submittal	Review Start Date	Review End Date	Site Visit
ATR Final P&S Review	05/06/19	06/03/19	N/A

Table 2 ATR Schedule

Section 6
Independent External Peer Review (IEPR)

6.1 General

Type I and Type II IEPRs are conducted in accordance with the guidance promulgated in EC 1165-2-217. Type I IEPRs are accomplished for decision documents, such as project studies. It is of critical importance for those decision documents and supporting work products where there are public safety concerns, significant controversy, a high level of complexity, or significant economic, environmental and social effects to the nation. However, it is not limited to only those cases and most studies should undergo Type I IEPR. In accordance with EC 1165-2-217 a Type II IEPR (SAR) shall be conducted on design and construction activities for hurricane and storm risk management and flood risk management projects, as well as other projects where potential hazards pose a significant threat to human life. This applies to new projects and to the major repair, rehabilitation, replacement, or modification of existing facilities

6.2 Decision on Type II IEPR

In accordance with EC 1165-2-217 a Type II IEPR (SAR) is not required for the following reasons: The project is not a hurricane, storm risk management or flood risk management project. There is nothing in the design of the replacement dolphins that would be considered innovative or unusual, rather the designs are typical concrete structures designed according to the latest USACE guidance for barge impact. Failure of these features does not pose a life safety risk. In addition, the following factors and evaluations were considered:

(i) The project involves the use of innovative materials or techniques where the engineering is based on novel methods, presents complex challenges for interpretations, contains precedent-setting methods or models, or presents conclusions that are likely to change prevailing practices.

Evaluation: The design and fabrication of the dolphins will replace the existing structures with a concrete structure. There are no innovative materials or construction techniques needed to complete the project. Also, members of the design team have recent experience with designing similar concrete dolphins. While the design involves some construction in the wet, methods utilized on recent successfully completed construction projects are being utilized. No precedent will be set by this project.

(ii) The project design requires redundancy, resiliency, and robustness.

Evaluation:

The project design requires appropriate levels of resiliency and robustness to that are required by EM 1110-2104 Strength Design for Reinforced Concrete Hydraulic Structures, EM 1110-2-2906 Design of Pile Foundations and soon to be released barge impact criteria. The concrete bullnose design concept has been utilized for other inland navigation contracts and has met all criteria.

(iii) The project has unique construction sequencing or a reduced or overlapping design construction schedule; for example, significant project features accomplished using the Design-Build or Early Contractor Involvement (ECI) delivery systems.

Evaluation: It is anticipated that this project will be awarded using a standard design-bid-build approach with construction sequencing requirements that have been used on similar inland navigation contracts.

Based on the assessment of the above answers a Type II IEPR will not be required. The signed memo containing the rationale not to conduct a Type II IEPR/SAR is shown in Attachment 3.

6.3 Decision on Type I IEPR

Type I IEPR is used for decision, or study, documents. The documents to be reviewed in this plan include the Design Documentation Report (DDR), Plans, and Specifications, which are all implementation documents. Therefore, Type I IEPR is not required.

Section 7
BCOES Reviews

Reviews to assure solicitation documents are readily understood; the product can be bid, built, operated and maintained efficiently; environmental concerns are protected, and sustainability is addressed. A 95% BCOES review will be conducted for this project. Design team members will conduct the BCOES reviews utilizing DrChecks. All DrChecks comments must be resolved and closed out by the reviewer.

Prior to the start of the BCOES Review, the Project Lead or Technical Manager should contact each office element to ascertain the name(s) of their representative(s) participating in the review. The plans and specifications shall be distributed to the office elements by memorandum with email link to the appropriate ProjectWise folder. The solicitation package including the 95% plans and specifications and DDR is being reviewed from 6 May 2019 – 03 June 2019. A follow-up Backcheck meeting will be discussed as whether it will be required and scheduled if necessary. The TM's supervisor will have reviewed the 100% solicitation package prior to dissemination to the team.

Section 8
Public Involvement

There is no expectation of obtaining support from personnel outside of the USACE to conduct reviews.

Section 9

In-Kind Contribution By Sponsor

There is no sponsor for this project. The structure is owned and operated by USACE New Orleans District.

Section 10
Value Engineering

The total project costs are expected to well exceed $2M, therefore a VE Study or Low Opportunity VE Justification is required. A Programmatic Value Engineering Study for guide walls was completed for the New Orleans District in May 2017. The study determined that the higher initial cost of constructing a more permanent structure are more economical over time. The economic losses due to delays in lockages quickly overcome any differences in cost between the structure types during initial construction. These impacts are then repeated (and likely exacerbated) when timber guide walls have to be replaced in the future. A concrete bull nose dolphin may have a higher initial cost but its ability to be constructed one time and with significant reductions to navigational impacts, makes it the most economical and best value option when factoring commerce losses.

Section 11
Public Posting of Review Plan

As required by EC 1165-2-217, the approved RP will be posted on the District public website (https://www.mvn.usace.army.mil/About/Offices/Programs-Project-Management/Project-Review-Plans/). This is not a formal comment period and there will be no set timeframe for the opportunity for public comment. If and when comments are received, the PDT will consider them and decide if revisions to the RP are necessary.

Section 12
Review Plan Approval and Updates

The MSC Commander, or delegated official, is responsible for approving this RP. The Commander's approval reflects vertical team input (involving the District, the RMO, and MVD Business Technical Division) as to the appropriate scope, level of review, and endorsement by the RMO. The RP is a living document and should be updated in accordance with 1165-2-217. All changes made to the approved RP will be documented in Attachment 2, Table 8 RP Revisions. The latest version of the RP, along with the Commanders' approval memorandum, will be posted on the District's webpage provided in Section 11 above, and linked to the HQUSACE webpage. The approved RP should be provided to the RMO.

Section 13
Engineering Models

EC 1105-2-412 mandates the use of certified or approved models for all planning activities to ensure the models are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. Planning models, for the purposes of the EC, are defined as any models and analytical tools that planners use to define water resource management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision making. The use of certified/approved planning model does not constitute technical review of the planning product. The selection and application of the model and the input and output data still are the responsibility of the users and is subject to DQC, ATR, and IEPR reviews (if required).

EC 1105-2-412 does not cover engineering models used in planning. The responsible use of well-known and proven USACE-developed and commercially available engineering software will continue and the professional practice of documenting the application of the software and modeling results will be followed. As part of the USACE Scientific and Engineering Technology (SET) Initiative, many engineering models have been identified as preferred or acceptable for use on Corps studies and these models should be used whenever appropriate. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR reviews. All appropriate reviews will be conducted in accordance with policy during the implementation phase of the project.

13.1 Model Certification/Approval Schedule and Cost

(1) Use of existing certified or approved design/planning models is encouraged. Where uncertified or unapproved models are used, approval of the model for use will be accomplished through the ATR process. The ATR team will apply the principles of EC 1105-2-412 during the ATR to ensure the model is theoretically and computationally sound, consistent with USACE policies, and adequately documented. If specific uncertified models are identified for repetitive use within a specific district or region, the appropriate PCX, MSC(s), and home District(s) will identify a unified approach to seek certification of these models.

(2) The models listed below may be used in the design of the IHNC 2019 Northeast and Southwest Dolphin Replacements project.

Table 3 Engineering Models

Model Name	Model Description	Model Type
MCACES or MII	These are cost estimating models. This is a cost estimating model that was developed by Building System Design Inc. Crystal Ball risk analyses software will also be used.	Cost Engineering
Microsoft Excel	Computational Analysis	Engineering
STAAD.Pro V8i	Structural Analysis and Design	Engineering
Mathcad	Minor Structural Load Development and Design	Engineering
USACE Barge Impact Analysis Web Tool	Web Program developed by the USACE Risk Management Center in coordination with Research by the University of Florida's Engineering program	Engineering

Section 14
Review Plan Points of Contact

Title	Organization	Phone
Fred Joers INDC Director	CEMVR-DC	Frederick.R.Joers@usace.army.mil (309) 794-5248
John Behrens INDC Technical Manager	CEMVR-DC	John.T.Behrens@usace.army.mil (309) 794-5620
David Lovett Lead Engineer	CEMVN-EDS	David.P.Lovett@usace.army.mil 504-862-2680
Brian Wybrecht Technical Manager	CEMVN-EDS	Brian.R.Wybrecht@usace.army.mil 504-862-1340
Vic Landry/Operations Manager	CEMVN-OD	Victor.A.Landry@usace.army.mil 504-862-2407

Table 4 RP POC's

ATTACHMENT 1
Team Rosters (FOUO)

Discipline/Role	Name	Description of Credentials
Technical Lead/Structural Engineer	[redacted]	[redacted]
Technical Manager/Structural	[redacted]	[redacted]
Geotechnical Engineer	[redacted]	[redacted]

Table 5 PDT Members

Discipline/Role	Name	Description of Credentials
DQC Review Lead/ Structural	[redacted]	[redacted]
Geotechnical Engineer	[redacted]	[redacted]

Table 6 DQC Reviewers

Discipline/Role	Name	Description of Credentials
ATR Lead/Structural Engineer	[redacted]	[redacted]

		[redacted]
Geotechnical Engineer	[redacted]	[redacted]
Construction Engineer	[redacted]	[redacted]

Table 7 ATR Team

ATTACHMENT 2
Review Plan Revisions

Revision Date	Description of Change	Page/Paragraph Number

Table 8 RP Revisions

ATTACHMENT 3: Rationale Not to Conduct a Type II IEPR/SAR

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, NEW ORLEANS DISTRICT
7400 LEAKE AVENUE
NEW ORLEANS LA 70118

JUN 0 8 2019

CEMVN-EDS

MEMORANDUM FOR Chief, Mississippi Valley Division (CEMVD-RB-T/Mike Turner)

SUBJECT: Rationale Not to Conduct Type II IEPR (SAR) for Inner Harbor Navigation Canal (IHNC) Lock, 2019 Northeast and Southwest Dolphin Replacements, Orleans Parish, Louisiana

1. A Type II Independent External Peer Review (IEPR) Safety Assurance Review (SAR) is not recommended for this project.

2. The project consists of the design and construction of two new concrete bull nose dolphins. The northeast dolphin will replace the existing northeast timber guidewall and sheet pile end cell dolphin adjacent to the IHNC lock on the north side. The southwest dolphin will replace the existing southwest end cell dolphin and be built in-line with the proposed concrete pontoon guidewall. There is nothing in the design of the replacement dolphins that would be considered innovative or unusual; rather the designs are typical concrete structures designed according to the latest USACE guidance for barge impact. Failure of these features does not pose a life safety risk. Therefore, it is not recommended that a Type II IEPR SAR be conducted. The explanation of the rationale for this recommendation is included (Encl).

3. For any questions related to this project, please contact Brian Wybrecht at 504-862-1340, email: Brian.R.Wybrecht@usace.army.mil.

[redacted]

Encl

JEAN S. VOSSEN, P.E.
Chief, Engineering Division

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, NEW ORLEANS DISTRICT
7400 LEAKE AVENUE
NEW ORLEANS LA 70118

CEMVN-EDS

MEMORANDUM FOR Chief, Mississippi Valley Division (CEMVD-RB-T/Mike Turner)

SUBJECT: Rationale Not to Conduct Type II IEPR (SAR) for Inner Harbor Navigation Canal (IHNC) Lock, 2019 Northeast and Southwest Dolphin Replacements, Orleans Parish, Louisiana

1. A Type II Independent External Peer Review (IEPR) Safety Assurance Review (SAR) is not recommended for this project.

2. The project consists of the design and construction of two new concrete bull nose dolphins. The northeast dolphin will replace the existing northeast timber guidewall and sheet pile end cell dolphin adjacent to the IHNC lock on the north side. The southwest dolphin will replace the existing southwest end cell dolphin and be built in-line with the proposed concrete pontoon guidewall. There is nothing in the design of the replacement dolphins that would be considered innovative or unusual, rather the designs are typical concrete structures designed according to the latest USACE guidance for barge impact. Failure of these features does not pose a life safety risk. Therefore, it is not recommended that a Type II IEPR SAR be conducted. The explanation of the rationale for this recommendation is included (Encl).

3. For any questions related to this project, please contact Brian Wybrecht at 504-862-1340; email: Brian.R.Wybrecht@usace.army.mil.

Encl

JEAN S. VOSSEN, P.E.
Chief, Engineering Division

[redacted]

Inner Harbor Navigation Canal (IHNC) Lock, 2019 Northeast and Southwest Dolphin Replacements

EXPLANATION OF RATIONALE FOR RECOMMENDATION TO NOT CONDUCT A TYPE II IEPR SAFETY ASSURANCE REVIEW (SAR)

Risk Based Determination of Need to NOT conduct a Type II IEPR (aka SAR)

Per EC 1165-2-214, two factors mandate an SAR and three additional factors should be considered in the determination whether or not an SAR should be conducted. These factors and their relevancy to this project are discussed below. If there is any lingering concern regarding the Rationale presented in the following table, a vertical team should be assembled upon request.

Factor		Relevancy to this Project
1) Is the project justified by life safety?	Mandate	No.
2) Would the project's failure pose a significant threat to human life?	Mandate	No.
3) Does the project involve the use of innovative materials or techniques where the engineering is based on novel methods, presents complex challenges for interpretations, contains precedent setting methods or models, or presents conclusions that are likely to change prevailing practices?	Consider	No. While the design involves construction in the wet, methods utilized on previously constructed projects are being utilized.
4) Does the project design require redundancy, resiliency, or robustness?	Consider	No.
5) Does the project have unique construction sequencing or a reduced or overlapping design construction schedule?	Consider	No. This is a standard construction project. Unique sequencing is not required.

ATTACHMENT 4: Sample DQC Certification

DISTRICT QUALITY CONTROL (DQC) REVIEW CERTIFICATION

(ER 1110-1-12 & EC 1165-2-214)

[THIS FORM IS TO BE COMPLETED WHEN THE DQC REVIEW IS FINISHED]

The MVN District has completed the (type of product or products) [e.g., Plans & Specifications and Design Documentation Report, Programmatic Cost Estimate, etc.] of (project name and location). Notice is hereby given that a District Quality Control (DQC) Review appropriate to the level of risk and complexity inherent in the project, has been conducted as defined in QMS 22800-MVN, Quality Control for USACE Prepared E&D Products and Technical Engineering Work Items.. During the review, compliance with established policy, principles and procedures, utilizing justified and valid assumptions, were verified. This included review of: assumptions; methods, procedures, and materials used in analyses; alternatives evaluated; the appropriateness of data used and level obtained; and reasonableness of the result, including whether the product meets the customer's needs and consistency with law and existing Corps' policy. The DQC review was accomplished by a review team independent of the PDT. All comments resulting from this DQC review have been resolved.

[Printed Name] Designer	Date
[Printed Name] District Quality Control Reviewer	Date
[Printed Name] Functional Team Leader	Date

ATTACHMENT 5: Sample ATR Certification

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the XXX Project. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-217. 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].

ATR Team Leader	Date
Operations Manager New Orleans District	Date
Frederick R. Joers, PE Review Management Office Representative Inland Navigation Design Center – CEMVR-DC	Date

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows:
1) *Concern:*.

Resolution:

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

Jean S. Vossen, PE Chief, Engineering Division New Orleans District – CEMVN-ED	Date