



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
PACIFIC OCEAN DIVISION, U.S. ARMY CORPS OF ENGINEERS
FORT SHAFTER, HAWAII 96858-5440

CEPOD-RBT

27 JUL 2011

MEMORANDUM FOR COMMANDER ALASKA ENGINEER DISTRICT (CEPOA-PM-C/DAVID WILLIAMS), P.O. BOX 898, ELMENDORF AFB, AK 99506-0898

SUBJECT: Review Plan Approval for the Plans and Specifications Package for the Unalakleet Coastal Erosion Control Project

1. The enclosed Review Plan for the Plans and Specifications Package for the Unalakleet Coastal Erosion Control Project has been prepared in accordance with EC 1165-2-209, Civil Works Review Policy, dated 31 January 2010. The Pacific Ocean Division is the lead office to execute this Review Plan which does not include Type II Independent External Peer Review.
2. I approve this Review Plan. It is subject to change as circumstances require, consistent with project development under the Project Management Business Process. Subsequent revisions to this Review Plan or its execution will require new written approval from this office.
3. The point of contact for this memorandum is Mr. Russell Iwamura, Senior Economist, Civil Works Integration Division, at 808-438-8859 or email Russell.K.Iwamura@usace.army.mil.

FOR THE COMMANDER:

A handwritten signature in black ink, appearing to read "J. Bersson", written over a horizontal line.

JAMES L. BERSSON, P.E., SES
Director, Regional Business

Encl
as

REVIEW PLAN

**Unalakleet Coastal Erosion Control Project
Phase II Rock Revetment
Unalakleet, Alaska**

Construction Plans and Specifications Package

Alaska District

MSC Approval Date: 27 July 2011

Last Revision Date: Original Review Plan



**US Army Corps
of Engineers®**

REVIEW PLAN
Unalakleet Coastal Erosion Control Project
Phase II Rock Revetment
Unalakleet, Alaska

Construction Plans and Specifications Package

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1. PURPOSE AND REQUIREMENTS

a. **Purpose.** This Review Plan defines the scope and level of peer review for the Unalakleet Coastal Erosion Control Phase II Project at Unalakleet, Alaska. The documents covered by this review plan form the Construction Plans and Specifications Package (P&SP), and include plans and specifications.

b. References

- (1) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2010
- (2) EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2011
- (3) Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
- (4) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007
- (5) Project Management Business Process REF 9270G, Data Management Plan
- (6) CEPOA-QMP-001, Alaska District Quality Management Plan
- (7) ER 11-1-321, Army Programs – Value Engineering, 28 Feb 2005
- (8) CEPOA-7.3-1 Design Quality Management
- (9) CEPOA-7.3-1-WI-09, Civil Works Review Policy Roll Out Brief
- (10) CEPOA-7.3-4 Independent Technical Review/Design Review
- (11) CEPOA-7.3-3, BCOE Review
- (12) ER 1110-1-8156, Engineering and Design – Policies, Guidance, and Requirements for Geospatial Data Systems, 30 Sep 2005

c. **Requirements.** This review plan was developed in accordance with EC 1165-2-209, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and operation, maintenance, repair, replacement and rehabilitation (OMRR&R). The EC outlines four general levels of review: District Quality Control (DQC), Agency Technical Review (ATR), Independent External Peer Review (IEPR), and Policy and Legal Compliance Review. In addition to these levels of review, decision documents are subject to cost engineering review and certification (per EC 1165-2-209) and planning model certification/approval (per EC 1105-2-412).

2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO is responsible for managing the overall peer review effort described in this Review Plan. The RMO can be a Planning Center of Expertise (PCX), the Risk Management Center (RMC) or a Major Subordinate Command (MSC) depending on the type of document and whether or not there are life safety issues. Since the P&SP documents addressed in this Review Plan are implementation documents, and since life safety issues are not anticipated for this project, the RMO for the peer review effort described in this Review Plan is the home MSC, Pacific Ocean Division Office in Honolulu, Hawaii. Approval of the Review Plan is also the responsibility of the MSC (Pacific Ocean Division). The home District (Alaska District) will post the approved Review Plan on its public website. The RMO will manage the ATR and provide the District a Review Report documenting the ATR and discussing any comments needing further action by the District. This Review Report will disclose the names of reviewers, their organizational affiliations, and include a short paragraph on each reviewer's credentials and relevant experience; include the charge to reviewers; describe the nature of their review and their findings and

conclusions; and include a verbatim copy of each reviewer's comments or represent the views of the group as a whole, including any disparate or dissenting views.

The RMO will coordinate with the Cost Engineering Directory of Expertise (DX) to ensure the appropriate expertise is included on the review teams to assess the adequacy of cost estimates, construction schedules and contingencies

3. STUDY INFORMATION

- a. **Plans and Specifications Package.** This review plan covers the P&SP for Phase II of the Unalakleet Coastal Erosion Control Project.
- b. **Study/Project Description.** The Unalakleet Coastal Erosion Control Project was authorized in the Consolidated Appropriations Act of 2005, as enacted by Title I, Section 117 of Public Law 108-447. Section 117 was repealed on March 11, 2009. Certain projects were allowed to continue work under Section 116 pursuant to availability of funds and amendments of existing PPAs, including the Unalakleet Coastal Erosion Control Project. As per guidance set forth in guidance provided in a memo from the Commander, Pacific Ocean Division on 1 June 2010, Alaska District may proceed under Section 116 to enter into construction contracts or modify existing construction contracts to complete the Unalakleet Coastal Erosion Control Project. Therefore, work continues under Section 116 of the Energy and Water Development and Related Agencies Appropriations Act, 2010, Public Law 111-85.

The work products, which form the P&SP, include: Construction Plans and Specifications.

The City of Unalakleet is in western Alaska along the eastern shoreline of Norton Sound, approximately 400 miles northwest of Anchorage. Unalakleet is approximately 150 miles southeast of Nome and is situated at the mouth of the Unalakleet River. It is the major educational, economic, social, and cultural community in the eastern Norton Sound Region, serving numerous smaller villages in the area along with Nome. The Corps of Engineers completed construction of a Coastal Erosion Control project along the Unalakleet shoreline in 2010. Under that project, a rock revetment was placed along the beach front to stabilize a portion of the bluff in front of the city. The design included a base item for the first 670 lineal feet of revetment and option items for additional revetment length. The option items for additional revetment length were not awarded due to funding constraints. The Phase II project is to construct a portion of the previously unawarded option items, i.e. provide a rock revetment along the bluff for approximately 460 lineal feet at the river mouth and nose of the Spit. Phase II utilizes the identical design and construction specifications from the base item project constructed in 2010. The construction activities for Phase II include placement of "Core", "B", and "A" rock over the existing gabions similar to the previous project. A similar temporary end section will be constructed at the southern terminus for eventual tie-in to a future bulkhead structure or additional revetment.

The Corps design provides a permanent level of protection from coastal erosion along the City's shoreline at the river mouth. The existing gabion baskets have been damaged and subsided to the point of providing insufficient protection for the community. Under the Corps project(s), the new rock revetment will greatly increase the stability of the shoreline and waterfront.

The option items represented by the Phase II P&SP have been “on-the-shelf” awaiting funding. This Review Plan addresses the Phase II P&SP.

In order to maintain continuity, the lead designer (Tech Lead) of the PDT for first Phase serves as the Tech Lead for Phase II. The Tech Lead also performed site visits and inspections during construction of the 2010 project so that Lessons Learned could be applied to Phase II. The 2010 project was constructed on schedule, with no modifications to the base item required, and the installation is performing as designed. The Corps performs annual inspections of the performance of the coastal erosion control project under Inspection of Completed Works.

The cost to construct Phase II will be less than \$10 million. This will be a cost shared project with the Local Sponsor, the City of Unalakleet.

This work is covered by an Environmental Assessment and Finding of No Significant Impact that was signed on 04 October 2007. Subsequent site visits have been accomplished with on-going coordination with relevant resource agencies. There has been no change in conditions since the FONSI was signed.

- c. **Factors Affecting the Scope and Level of Review.** This pre-construction activity is in accordance with the TAB E Fact Sheet, Unalakleet Alaska Coastal Erosion Project, Section 117 Expedited Erosion Control Project, dated 17 July 2006. The FONSI was signed on 04 October 2007. Subsequent site visits have been accomplished with on-going coordination with relevant resource agencies. There has been no change in conditions since the FONSI was signed. The P&SP for the combined First Phase/Phase II project, as well as the Cost Estimate, was prepared in accordance with the Alaska District Quality Management Plan. BCOE certification was 28 September 2007. Work continues under Section 116 of the Energy and Water Development and Related Agencies Appropriations Act, 2010, Public Law 111-85 as set forth in guidance provided in a memo from the Commander, Pacific Ocean Division on 1 June 2010. The Phase II work was originally included in the above described activities, and the current action will be to “repackage” the Phase II work as a RFP for procurement through a conventional unit price type construction contract. Construction of Phase II will complete the overall project back to Station 3+50 for eventual tie-in to a future bulkhead or additional revetment. Construction scheduling and sequencing of the work are routine. There are no known life safety issues associated with construction of the project. The contractor will be required to conduct his activities in accordance with Corps of Engineers safety standards.
- d. **In-Kind Contributions.** Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC, ATR, and IEPR. There are no in-kind products and analyses to be provided by the non-Federal sponsor.

4. DISTRICT QUALITY CONTROL (DQC)

All decision and implementation documents (including supporting data, analyses, environmental compliance documents, etc.) shall undergo DQC. DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). The home district shall manage DQC. Documentation of DQC activities is required and should be in accordance with the Quality Manual of the District and the home MSC.

- a. **Documentation of DQC.** The P&SP for the combined Phase I/Phase II project, as well as the Cost Estimate, was prepared in accordance with the Alaska District Quality Management Plan. Because the Phase II portion of work has been previously prepared, the P&SP will undergo an internal BCOE review and legal certification prior to procurement. In addition, an updated current working estimate (CWE) will be prepared.
- b. **Products to Undergo DQC.** The activities addressed in paragraph 4a. will be conducted in accordance with the Alaska District Quality Management Plan.
- c. **Required DQC Expertise.** DQC has already been completed for this project with only a final ATR remaining to be completed. If future DQC is required, the DQC reviewer should have a minimum of 5 years experience in the construction of coastal erosion control measures.

5. AGENCY TECHNICAL REVIEW (ATR)

ATR is mandatory for all decision and implementation documents (including supporting data, analyses, environmental compliance documents, etc.). The objective of ATR is to ensure consistency 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 results in a reasonably clear manner for the public and decision makers. ATR is managed within USACE by the designated RMO and is conducted by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. ATR teams will be comprised of senior USACE personnel and may be supplemented by outside experts as appropriate. The ATR team lead will be from outside the home MSC.

- a. **Products to Undergo ATR.** The Phase II P&SP will undergo an ATR. The review will be limited to identifying constructability issues and concerns. The ATR will facilitate the subsequent BCOE review to be conducted by Alaska District.
- b. **Required ATR Team Expertise.** The ATR will be limited in scope. The ATR reviewer should have a minimum of 5 years experience in the construction of coastal erosion control measures. The ATR reviewer may also fulfill the responsibilities as ATR Lead.
- c. **Documentation of ATR.** DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. Comments should be limited to those that are required to ensure adequacy of the product. The four key parts of a quality review comment will normally include:
 - (1) The review concern – identify the product’s information deficiency or incorrect application of policy, guidance, or procedures;
 - (2) The basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not be properly followed;
 - (3) The significance of 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
 - (4) The probable specific action needed to resolve the concern – identify the action(s) that the reporting officers must take to resolve the concern.

In some situations, especially addressing incomplete or unclear information, comments may seek clarification in order to then assess whether further specific concerns may exist.

The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical team coordination (the vertical team includes the district, RMO, MSC, and HQUSACE), and the agreed upon resolution. If an ATR concern cannot be satisfactorily resolved between the ATR team and the PDT, it will be elevated to the vertical team for further resolution in accordance with the policy issue resolution process described in either ER 1110-1-12 or ER 1105-2-100, Appendix H, as appropriate. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

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

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

ATR may be certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. The ATR Lead will prepare a Statement of Technical Review certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team). A Statement of Technical Review should be completed, based on work reviewed to date, for the AFB, draft report, and final report. A sample Statement of Technical Review is included in Attachment 2.

6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

IEPR may be required for decision documents under certain circumstances. IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. A risk-informed decision, as described in EC 1165-2-209, is made as to whether IEPR is appropriate. IEPR panels will consist 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. There are two types of IEPR:

- Type I IEPR. Type I IEPR reviews are managed outside the USACE and are conducted on project studies. Type I IEPR panels assess the adequacy and acceptability of the economic and environmental assumptions and projections, project evaluation data, economic analysis, environmental analyses, engineering analyses, formulation of alternative plans, methods for integrating risk and uncertainty, models used in the evaluation of environmental impacts of

proposed projects, and biological opinions of the project study. Type I IEPR will cover the entire decision document or action and will address all underlying engineering, economics, and environmental work, not just one aspect of the study. For decision documents where a Type II IEPR (Safety Assurance Review) is anticipated during project implementation, safety assurance shall also be addressed during the Type I IEPR per EC 1165-2-209.

- **Type II IEPR.** Type II IEPR, or Safety Assurance Review (SAR), are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. Type II IEPR panels will conduct reviews of the design and construction activities prior to initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health safety and welfare.

a. Decision on IEPR. The Phase II P&SP is not a study. Rather, it is an implementation activity that extends an existing project. There are no known life safety issues associated with construction of the project. The contractor will be required to conduct his activities in accordance with Corps of Engineers safety standards. Also, the magnitude of the project is limited, with a construction cost under \$10 million. The City has not disputed the cost of the project. The regional significance is limited, affecting only the residents of the community of Unalakleet. The complexity of the project is considered routine. Standard construction materials and methods are utilized. The work does not involve new or controversial scientific information and is not likely to result in highly influential scientific assessments. The environmental effects of the project modifications have already been evaluated in an EA and a FONSI has been signed. The project is not highly controversial with the public, and it is supported by the City of Unalakleet. The information in the P&SP is not based on novel methods, does not present complex challenges for implementation, does not contain precedent-setting methods, and does not present conclusions that are likely to change prevailing practices. Thus, Type I and Type II IEPRs are not required.

b. Products to Undergo Type I or Type II IEPRs. Not applicable

c. Required Type I or Type II IEPR Panel Expertise. Not applicable.

d. Documentation of Type I or Type II IEPR. Not applicable.

7. POLICY AND LEGAL COMPLIANCE REVIEW

All decision and implementation documents will be reviewed throughout the study process for their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100. These reviews culminate in determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the home MSC Commander. DQC and ATR augment and complement the policy review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of findings in decision and implementation documents.

8. COST ENGINEERING DIRECTORY OF EXPERTISE (DX) REVIEW AND CERTIFICATION

All decision documents shall be coordinated with the Cost Engineering DX, located in the Walla Walla District. The DX will assist in determining the expertise needed on the ATR team and Type I IEPR team (if required) and in the development of the review charge(s). The DX will also provide the Cost Engineering DX certification. The RMO is responsible for coordination with the Cost Engineering DX.

9. MODEL CERTIFICATION AND APPROVAL

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 resources 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 a 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 is still the responsibility of the users and is subject to DQC, ATR, and IEPR (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 commercial 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 (if required).

- a. **Planning Models.** The following planning models are anticipated to be used in the development of the decision document: no planning models have been used in the development of the P&SP.
- b. **Engineering Models.** The following engineering models are anticipated to be used in the development of the decision document: no engineering models have been used in the development of the P&SP.

10. REVIEW SCHEDULES AND COSTS

- a. **ATR Schedule and Cost.** The ATR for the Unalakleet P&SP is expected to be accomplished in September 2011, with an estimated cost of \$5,000.
- b. **Type I IEPR Schedule and Cost.** Not applicable.
- c. **Model Certification/Approval Schedule and Cost.** Not applicable.

11. **PUBLIC PARTICIPATION.** The public review of the Environmental Assessment and FONSI has already occurred for the project. No significant issues arose during the review from the public or any resource agency. Once approved, this Review Plan will be posted on the Alaska District public website.

12. REVIEW PLAN APPROVAL AND UPDATES

The Pacific Ocean Division Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input (involving district, MSC, RMO, and HQUSACE members) as to the appropriate scope and level of review for the implementation document. Like the PMP, the Review Plan is a living document and may change during project development. The home district is responsible for keeping the Review Plan up to date. Minor changes to the review plan since the last MSC Commander approval are documented in Attachment 3. Significant changes to the Review Plan (such as changes to the scope and/or level of review) should be re-approved by the MSC Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commanders' approval memorandum, should be posted on the Home District's webpage. The latest Review Plan should also be provided to the RMO and home MSC.

13. REVIEW PLAN POINTS OF CONTACT

Public questions and/or comments on this review plan can be directed to the following points of contact:

Alaska District POC, Bruce Sexauer, Chief of Project Formulation (907) 753-5619
Pacific Ocean Division POC, Russell Iwamura, Senior Economist (808) 438-8859

ATTACHMENT 1: TEAM ROSTERS

The Project Delivery Team is comprised of the following individuals:

Middy Johnson	Mayor	Unalakleet	907-624-3622
David P. Williams	Project Manager	PM-C	907-753-5621
Alan Jeffries	Designer/Technical Lead	EN-CW-HH	907-753-2740
Bret Walters*	Biologist	EN-CW-ER	901-544-0777
Al Arruda	Cost Engineer	EN-ES-CE	907-753-5679
Linda Arrington	Realty Specialist	RE-RS-AQ	907-753-2849
Christine Dale	Contract Specialist	CT-SP	907-753-5618
Anne Burman	Counsel	CEPOA-OC	907-753-2769

*Denotes team member no longer with Alaska District.

The DQC team was comprised of the following individuals:

Joe Williams		CO-CS	907-753-5516
Ze Jong		CO	907-753-2503
Merlin Peterson		EN-CW-HH	907-753-2671
Guy McConnell		EN-CW-ER	907-753-2614
Greg Carpenter *		EN-ES-SG	605-224-5862

*Denotes team member no longer with Alaska District.

ATR Team: The following persons will be on the Unalakleet ATR from Seattle District:

David Michalsen	Hydraulic Engineer, reviewer/ ATR lead	NWS-EN-HH-HE-CU	206-764-3705
Dan Katz	Hydraulic Engineer, reviewer	NWS-EN-HH-HE-CU	206-764-3271

Mr. David R. Michalsen, P.E., received a Bachelor of Science degree in Civil Engineering from the University of Iowa in 2002. He received a Master of Ocean Engineering from Oregon State University in 2004. Mr. Michalsen worked for the U.S. Army Corps of Engineers Portland District from 2004 to 2006 and has worked for the Seattle District since 2006. Mr. Michalsen is a registered professional civil engineer in the State of Washington. Mr. Michalsen is presently the Coastal Engineering Unit lead within the Hydraulic Engineering Section. His coastal engineering experience includes coastal structure rehabilitation, beach and dune nourishment design, ecosystem restoration, and dredge material disposal fate analysis and modeling at various civil works and federal navigation projects on the Oregon and Washington coast, including the Mouth of the Columbia River, Willapa Bay, Grays Harbor, Quillayute River, Elwha River, and Neah Bay. He has also assisted in technical oversight for coastal engineering and dredging related projects on a number of EPA Superfund projects in Puget Sound. Mr. Michalsen has over seven years of experience in constructing coastal erosion measures such as Gray's Harbor South Jetty and the Point Chehalis Grace Harbor Revetment.

Mr. Daniel, M. Katz, P.E., received a Bachelor of Science degree in Environmental Science and Forestry from the State University of New York in 1979 and a Master of Science in Civil Engineering from the University of Idaho in 1990. He worked as a Hydraulic Engineer at the U.S. Army Corps of Engineers Walla Walla District from 1991 to 2003. During this time he designed features of projects including fish passages, spillways,

outlet works, powerhouses and navigation locks. He provided guidance to other engineers and technicians, wrote scopes of work, design memoranda, technical reports, and letter reports. From 2003 to 2005 he was a Regional Hydraulic Design Specialist for the U.S. Army Corps of Engineers Seattle District. During that time he provided expertise and advice for hydraulic analysis and design on a range of high and low head hydraulic structures. Since 2005 he has acted as Chief of the Hydraulic Engineering Section (including the Coastal Engineering Unit) for the U.S. Army Corps of Engineers Seattle District. Mr. Katz has experience over the last 20 years in constructing erosion control measures including: Lower Monumental Dam Spillway erosion repair, Chief Joseph Dam Spillway Basin erosion repair, Mud Mountain Dam modeling, Howard Hanson Dam Outlet Works erosion repair, and Lake Washington Ship Canal channel erosion and lock monolith repair. In addition, he has acted in a supervisory position on all of Mr. Michalsen's coastal erosion repair projects and therefore meets the requirements for acting as a reviewer.

ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECISION DOCUMENTS

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the <type of product> for <project name and location>. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-209. 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 DrCheckssm.

SIGNATURE

David Michaelsen
ATR Team Leader
NWS-EN-HH-HE-CU

Date

SIGNATURE

David P. Williams
Project Manager
CEPOA-PM-C

Date

SIGNATURE

Russell Iwamura
Review Management Office Representative
CEPOD-PDC

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.

SIGNATURE

Dave Frenier
Chief, Engineering Division
CEPOA-EN

Date

SIGNATURE

Carl Borash
Chief, Planning Division
CEPOA-EN-CW

Date

ATTACHMENT 3: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number

ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS

<u>Term</u>	<u>Definition</u>	<u>Term</u>	<u>Definition</u>
AFB	Alternative Formulation Briefing	NED	National Economic Development
ASA(CW)	Assistant Secretary of the Army for Civil Works	NER	National Ecosystem Restoration
ATR	Agency Technical Review	NEPA	National Environmental Policy Act
CSDR	Coastal Storm Damage Reduction	O&M	Operation and maintenance
DPR	Detailed Project Report	OMB	Office and Management and Budget
DQC	District Quality Control/Quality Assurance	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
DX	Directory of Expertise	OEO	Outside Eligible Organization
EA	Environmental Assessment	OSE	Other Social Effects
EC	Engineer Circular	PCX	Planning Center of Expertise
EIS	Environmental Impact Statement	PDT	Project Delivery Team
EO	Executive Order	PAC	Post Authorization Change
ER	Ecosystem Restoration	PMP	Project Management Plan
FDR	Flood Damage Reduction	PL	Public Law
FEMA	Federal Emergency Management Agency	QMP	Quality Management Plan
FRM	Flood Risk Management	QA	Quality Assurance
FSM	Feasibility Scoping Meeting	QC	Quality Control
GRR	General Reevaluation Report	RED	Regional Economic Development
Home District/MSD	The District or MSD responsible for the preparation of the decision document	RMC	Risk Management Center
HQUSACE	Headquarters, U.S. Army Corps of Engineers	RMO	Review Management Organization
IEPR	Independent External Peer Review	RTS	Regional Technical Specialist
ITR	Independent Technical Review	SAR	Safety Assurance Review
LRR	Limited Reevaluation Report	USACE	U.S. Army Corps of Engineers
MSC	Major Subordinate Command	WRDA	Water Resources Development Act

