White Paper on Engineering Certifications – No. 2
ASDSO – ADCOM
August 3, 2013

On May 25, 2012 the ADCOM submitted a white paper to the ASDSO Board of Directors discussing the issues of engineering certifications. This paper, which is attached as Attachment A, described the various ways certifications are used, the concerns voiced by the engineering profession over the use of the terms "certification" or phrase "I certify, and the typical approaches engineers have used to deal with the issue. The interpretation of the words "certify" and "certification" are ambiguous. At the heart of the concern is that in some states a court could construe a "certification" to constitute a warranty or guarantee by the engineer, which elevates the engineer's liability beyond the normal standard of engineering practice. Such a situation could jeopardize the engineer's professional liability insurance, which normally will contain an exclusion clause for guaranties or warranties. Also, the term "certify" in this type of contract may extend the engineer's liability beyond the parties executing the contract, to outside third parties. An engineer can only "certify" facts that he/she knows to be absolutely true, such as the fact that a representative of the firm visited a site on a given day, but cannot certify as to the construction responsibilities of the contractor. At the annual dam safety conference in Denver, the white paper was distributed to attendees of the regional caucuses along with a briefing on the issue. Input was then solicited from the participants on the topic

Below is a bullet list of comments that were recorded from the four Caucus meetings

- The state representatives appeared to understand and appreciate the potential legal ramifications of the use of the words "certification" and "certify" that could imply a guarantee that increases the engineer's responsibility beyond the normal standards of professional practice, and beyond what an engineer's normal professional liability insurance will cover. There were comments that voiding the engineer's professional engineering insurance was not in the best interests of anyone.
- No one voiced an objection to the typical approaches engineers use to deal with the certification issue which include: 1) defining the word certify on the agencies form or deliverable and / or provide limitation statements so as not to constitute a guarantee or warranty, 2) Change the words ***"I certify"*** to words such as ***"I state"*** or ***"I declare".***
- Not all states require "certification" language, and states that do require such language may require it for different applications such as: inspections, design, construction completion, etc.
- It would be difficult for many states to change their language and delete the word "certify" or "certification", especially if those words are written into the regulations or law. Need to review each state's regulations and laws.
- One individual voiced a reservation to the last phrase of the last sentence "as to the professional engineering services" in the suggested limitations statement that read "We have endeavored to provide professional engineering services as reported herein in accordance with generally accepted dam engineering practices, and make no warranties, either express or implied, as to the professional services provided.
- Since in some states "certification statements" are required for services other than inspections, different limitations statements would be needed for different services.
- There was a question as to the ultimate objective of the white paper. The objective is to provide a definition of the word "certification" and the use of appropriate ENGINEER limitations statements in the Model State Dam Safety Program.

- Developing approaches for dealing with "certification" language should encompass both dams and levees and consider the perspective of FEMA and other federal agencies.

As follow-up to the last two items, ADCOM reviewed the Model Law and Program document to determine where and how the words "certification" and certify" are used and reviewed the current federal guidance on the use of the word certification.

Review of Model Dam Safety Program and Law

The current version of the Model State Dam Safety Program and Model Law for State Supervision of Safety of Dams and Reservoirs (Model Law) are dated 2007, and are attached to this white paper as Attachment B.

The Model State Dam Safety Program requires the "design engineer's certification" following construction stating that the construction was conducted in compliance with approved plans and specifications along with "as-built plans certified by the design engineer" in order to obtain a "Certificate to Impound". The Model Law requires "a statement signed by the design engineer certifying that the project was constructed, reconstructed, or enlarged in conformance with approved plans and specifications, accompanied by the supplementary drawings or descriptive matter signed and sealed by the design engineer showing or describing the dam and reservoir as actually constructed, reconstructed, or enlarged". "Design engineer certifications" are mentioned in the following sections within the two documents:

Model State Dam Safety Program
- Chapter II, Section II.A.11,
- Chapter II, Section III.C1.b,
- Chapter III, Section I.G.1

Model Law
- Chapter 7000. Article 7100, Par. 7110
- Chapter 7000, Article 7300. Par. 7310
- Chapter 7000, Article 7400, Par. 7410

Neither document defines the words "certification" or "certify" and as described above, could be interpreted as a "guarantee" or "warranty" by the engineer. In addition, since the design engineer can only "certify" that which he/she knows to be a fact, the section of the Model Law that requires a statement signed by the design engineer certifying that the project was constructed, reconstructed, or enlarged in conformance with approved plans and specifications" is inappropriate and places the engineer in jeopardy of "guaranteeing" something he/she cannot know to be true.

Review of Federal Guidance on "Engineering Certifications"

The requirement for "engineering certifications" has also been a major topic of discussion and action at the federal level. In order for communities behind levees to be covered under FEMA's flood insurance program, a "levee certification" is required per the Federal Code 44CFR 65.02 which states:

"For the purpose of this part, a certification by a registered professional engineer or other party does not constitute a warranty or guarantee of performance, expressed or implied. Certification of data is a statement that the data is accurate to the best of the certifier's knowledge. Certification of analyses is a statement that the analyses have been performed correctly and in accordance with sound engineering practices. Certification of "as-built" conditions is a statement that the structure(s) has been built according to the plans being certified, is in place, and is fully functioning."

Even with this definition written into the Federal Law, many engineers still will not "certify" a levee for reasons of liability beyond the normal standard of care. One reason for this concern is that while the CFR may have clarified the term "certify" in this instance, the term may imply to others outside of the federal sector, performance expectations of the structures beyond those listed above. The U.S. Army Corps of Engineers (USACE) has recognized this concern and issued Engineering Circular EC 1110-2-6967, USACE Process for the National Flood Insurance Program (NFIP) Levee System Evaluation where the term ***"levee certification"*** has been replaced with the term ***"levee system evaluation"***. The USACE has also issued a document of Frequently Asked Questions relative to EC 1110-2-6067, which is attached as Attachment C. Several of the questions deal with the use of the word "certification" and the reasoning behind the USACE's decision to change their terminology so as to not use the term. Question No. 7 in particular asks: ***"If a private architect-engineer firm would like to use this USACE EC, does the term "levee certification" or the word "certify" have to be in the documentation they submit to FEMA to comply with 44 CFR 65.10?"*** The USACE's response was ***"No"*** and went on to also state: **"For example, FEMA will accept statements, accompanying the required backup data and information , from a professional engineer such as *"To the best of my knowledge, the _____ levee system has been designed and constructed in accordance with sound engineering practices to provide protection from the base flood, is in place, is fully functional, and meets the requirements of 44 CFR 65.10 as demonstrated by the attached supporting documentation"*.**

<u>Conclusions and Recommendations</u>

The meaning of the words "certify" and "certification" are ambiguous and have been interpreted by some as a "guarantee" or "warranty" which could elevate the engineer's liability beyond the normal standard of practice and jeopardize the engineer's professional liability insurance. The use of the term ***"certification"*** or requiring the engineer to ***"certify"*** does not make a dam safer or reduce the risk, but does present potential legal problems for the engineer. The ADCOM recommends that the Model State Dam Safety Program and Model Law be modified to be consistent with the USACOE EC 1110-2-6067 guidance on ***"certifications"***. First, where possible, we recommend that the term ***"certification"*** be replaced with terms such as ***"statement"***, ***"affirmation"***, or ***"declaration"***. Where this first recommendation cannot be implemented, an alternative approach would be that the term ***"certification"*** be defined in the documents using language similar to 44 CFR 65.02. A suggested definition is: "***An engineering certification is a statement of opinion by a professional engineer stating that the work has been conducted in accordance with the normal standard of care within the dam engineering practice and does not constitute a warranty or guarantee of facts or conditions certified".*** *Furthermore, the engineer should not be required to use the word "certify", when submitting documentation for a Certificate to Impound. Rather, the engineer should be allowed to substitute other words such as* ***"I state"*** *or* ***"I affirm"*** *or other similar words in place of* ***"I certify".*** A typical statement to be provided by the engineer with the supporting data to obtain a Certificate to Impound would be*: "I state that in my professional opinion the work was conducted in general conformance with the approved plans and specifications."***

In addition, it is appropriate that supporting documentation such as design reports, inspection reports, geotechnical reports, and other types of reports and documentation contain limitations statements. An example limitations statement for a dam safety inspection is provided as Attachment A along with the initial white paper. Limitation statements for other types of activities such as design, and construction monitoring should be tailored to address the specific services provided and situation.

ATTACHMENT A

May 2012 ADCOM White Paper on Certification

White Paper on Engineering Certifications

ASDSO ADCOM
Final Draft – May 25, 2012

Many regulatory agencies, including some state dam safety agencies, require engineers to sign statements that are titled "certifications" or use the term "I certify". These "certification" statements are generally part of the permitting process and can be required at various stages of a project, including:

- the design stage when applying for a construction permit,
- following construction when applying for an operations permit, or
- for regular dam safety inspections, operations and maintenance plans, as part of operations.

Some states refer to the dam safety permit as a "certificate" and the process of permitting a dam as a "certification" process.

The problem with the use of the words "certify, "certification", and "certificate" is that they are ambiguous and can be misconstrued or relied upon as an absolute assurance or guarantee of the accuracy of the fact or condition certified. Certifying opinions may be acceptable under certain conditions, if the engineer is qualified to provide the opinion, the opinion relates to matters within the engineer's knowledge and control, and the engineer limits his/her certification, as appropriate. However, the standards of professional practice prohibit engineers from providing an express or implied guarantee that certain conditions exist when the engineer cannot know for certain that the certification is true. To the extent a certification is written as an absolute statement of unqualified fact, not a qualified professional opinion, the certification can imply a risk-free situation which does not exist, and provide a false sense of security to owners and the general public. An overbroad or unqualified certification can also create liability concerns for the engineer by creating a "guarantee" or "warranty" as to the matter certified. Such a guarantee increases the engineer's responsibility beyond the normal standards of professional practice, and beyond what an engineer's normal professional liability insurance will cover. The potential absence of insurance coverage in the event of a loss certainly does not benefit the dam owner, the state, or public safety.

A number of professional organizations, such as ASFE[1] have brought the problems associated with "certifications" to the attention of engineers, owners, and regulators, and offers several alternatives for addressing the issue. Examples include:

1) Delete the words "certify", "certification", and "certificate" and replace with other words. In such a case the phrase "I certify" could be modified to "I state in my professional opinion" or "I declare to the best of my knowledge, information, and belief".

2) Define the words "certify" or "certification" to mean the statement of a professional opinion which excludes "guarantees" or "warranties".

The ASDSO Advisory Committee recommends to the ASDSO Board that state representatives are made aware of the problems associated with "certification" statements, and that they are encouraged to address this issue at the state level. In addition, we propose that language be added to the State Model Dam Safety Program to define the word "certify" and its derivatives.

[1] ASFE Contract Reference Guide, Edition 3.1

We further recommend that the use of appropriate ENGINEER limitations statements be included in the Model State Dam Safety Program.

Attached is sample representation to be included in an inspection report.

This is to represent that the above dam has been inspected for the purposes and to the extent indicated in the report using the degree of professional skill, care and judgment normally exercised by dam engineering professionals with the following findings:

The observations presented herein represent the condition of the dam on the date of the inspection and pertain to the condition of the dam, spillway and appurtenant works documented in this report. The condition and performance of a dam can change rapidly, particularly with changes in reservoir level, climatic conditions, and usual and unusual loading conditions. Significant changes in condition or performance should be immediately reported to (INSERT NAME OF FIRM), and/or the (INSERT STATE DAM SAFETY AGENCY NAME). Failure to do so could impact the safety of the dam and downstream population.

The inspection documented in this report does not include an assessment of site safety as related to facility operators and the public. Hazards may exist at the site which should be addressed by the Owner.

We have endeavored to provide professional engineering services as reported herein in accordance with generally accepted dam engineering practices, and make no warranties, either express or implied, as to the professional services provided.

_____

(INSERT NAME OF ENGINEER)

ATTACHMENT B

Excerpts from Model Dam Safety Program and Model Law Related to Certification

The National Dam Safety Program

Model State Dam Safety Program

FEMA 316/July 2007

Federal Emergency Management Agency
www.fema.gov

Association of State Dam Safety Officials
www.damsafety.org

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CHAPTER II - PERMITTING/APPROVAL OF PLANS/AUTHORIZATION TO IMPOUND

Every state must have the authority to regulate activities that affect the safety of dams*. Authority to regulate these activities must be available through permitting, application approval, written approval of plans, certification of work, or other regulatory procedures. For convenience, within this chapter all these regulatory activities will be simply identified as “permitting.”

Many activities exist for which a dam permit is required. The information that should be included in the application for a permit varies with the type of proposed activity and the size and hazard potential of the structure in question.

This chapter discusses four basic topics. They are:

- activities that require a permit
- information to be included with the permit application
- procedures for permit application review
- grounds and procedures for permit revocation

Appendix B is a listing of typical requirements that can be included in the permit requirement section of administrative rules.

I. Activities that Require a Permit

Any activity related to the safety of dams within the jurisdiction of the legislation/regulations as established in Chapter I must be permitted prior to the start of that activity. Activities that commonly fall within this category include the following:

- construction of a new dam;
- reconstruction of an existing dam;
- enlargement* of an existing dam;
- modification or alteration* of an existing dam;
- repair* of an existing dam;
- removal* of an existing dam;

- abandonment* of an existing dam;
- operation and maintenance of an existing dam;
- impoundment of water; and
- change of ownership.

II. Information to be Included In a Permit Application

A. For new construction, reconstruction, or modification of an existing dam, the following minimum items must be required and approved prior to the initiation of the construction:

1. Construction plans and specifications prepared by a engineer*;
2. Hazard potential identification;
3. Statement of ownership;
4. Hydrologic and hydraulic design computations;
5. Structural design computations;
6. Geotechnical data and design computations;
7. Instrumentation plan.
8. Operation Plan;
    a. During construction; and
    b. Life of structure.
9. Maintenance plan;
10. Emergency action plan;
11. Agreement to submit as-built plans certified by the design engineer; and
12. Statement of financial capability/performance bond in accordance with statute and regulations.

CHAPTER III – INSPECTIONS AND SAFETY EVALUATIONS

Inspection activities provide the basis for dam* inventories, evaluation of downstream hazards and hazard potential classification, correlation of approved construction plans with actual construction, safety evaluation of existing dams, and emergency* response planning and execution. Adequate inspection of a dam and the documentation of such inspections are necessary before enforcement can be taken.

This chapter contains a discussion of issues related to implementing a program of periodic inspections and safety evaluations. It also makes suggestions for improving existing programs.

I. Considerations for Implementing an Inspection Program

A. Staff;

Specific aspects of personnel qualifications and staffing levels can be found in Chapter VI and Appendix I. Some of the considerations in determining these qualifications and staffing levels for an inspection program include:

1. The initial task of the inspection program must be to identify, classify and evaluate the existing dams in the state. The hazard potential classification for the dams located will need to be determined during the initial inspection of all the dams in the state. An adequate number of inspectors to accomplish this task will be necessary; and

2. Inspection frequency of existing dams must be decided. Geographical areas define whether a central inspection office or a regional office approach is desirable. If inspection frequency is not set by law, annual inspections of high hazard potential dams, biennial inspections of significant hazard potential dams* and inspection of low hazard potential dams every five years are recommended. An adequate number of qualified inspectors must be available for inspections and associated enforcement work after the initial inventory is completed. Average time for inspection of permitted/approved dams including travel time, on-site inspection time, and report writing may be as much as four (4) person days for high hazard potential dams, three (3) person days for significant hazard potential dams, and two (2) person days for low hazard potential dams. A detailed inspection, analysis and evaluation of a dam with production of a detailed report may take two person-months or more. This inspection time may vary on proximity

develop policy, standard forms, and other dam safety standards, and conduct quality assurance as outlined below:

Quality Assurance/Quality Control. As a result of an owner-responsible inspection program, a Quality Assurance/Quality Control (QA/QC) procedure conducted by the state is important to help ensure that formal inspections are being conducted in accordance with the standards. The state should implement the following measures. Recommended staffing needs for QA/QC are presented in Appendix I.

1. The dam owner should be required to sign an annual statement indicating that the dam is being maintained in accordance with the approved maintenance plan and that the emergency action plan, if required, has been exercised and updated as necessary.

2. The state shall have the authority to make inspections and inspect records and manuals.

3. The state program should promptly review all submitted reports and requirements.

4. The state should make independent periodic field inspections of jurisdictional dams to verify the findings of the owner's inspection.

5. The state should require more frequent or follow-up inspections by the owner's engineer if conditions indicate that more frequent inspections are necessary to assure adequate protection of life and property.

6. The state should document deficiencies by letter to the owner with specified time frames for abating the deficiencies consistent with recommendations of the inspection report.

In order to ensure the effectiveness of an owner-responsible inspection program, the state dam safety program should have enforceable regulations related to performance of owner inspections (See Chapter IV).

III. Considerations for Upgrading an Inspection Program

After an inspection program is established, or when the opportunity arises to add to an existing program, advanced inspections and in-depth reviews and evaluations should be conducted. The following areas should be considered for improvement:

A. Advanced Inventory;

An inventory verification of all dams within state jurisdiction every five years can be an effective tool for determining the overall program status and progress. Inventories should list all pertinent aspects of each dam such as height, storage, and hazard potential classification. Additionally, inventories can list permit or application approval status, inspection priority status, purpose of dam, owner information, enforcement status, and other useful information. Inspection teams must be trained to gather the information necessary from the field including use of global positioning stations to locate dams;

B. Advanced Inspections;

Inspection teams should conduct detailed inspections of dams to evaluate dam performance under normal or unusual site conditions. A detailed inspection of all outlet works should be performed a minimum of every five years. The inspection should include direct visual observation where practical and safe, or by remote cameras where necessary. Advanced inspections should take advantage of all available data such as agency and owners' records of construction, instrumentation records, and operation and maintenance records. Field inspections may include accurate measures of watershed and reservoir conditions, spillway configurations, embankment conditions, downstream hazard potential, or other specific problem areas. Wherever possible, gates and other operating equipment should be exercised to demonstrate proper functioning.

Additional unscheduled inspections should take advantage of unusual site conditions, such as a lowered or drained reservoir, or reservoir levels higher than normal. It may be useful to inspect concrete and masonry dams on a sunny day after heavy ice build-up in the reservoir. Inspections are useful also after record storms, snow melt, and earthquake events.

C. Design Reviews and Evaluations;

The agency should re-evaluate each high hazard dam every five years or when changes in the state of practice occur. This includes in-depth calculations and evaluations of hydrology, hydraulics, structural, stability, earthquake engineering and construction. Where necessary, a reanalysis employing advanced methods and modern design criteria and practices should be conducted in order to determine if the structure meets current design criteria. Specialized engineering software should be used to adequately evaluate each component of the dam for the various loading conditions expected.

D. Advanced Inspection Techniques and Equipment;

State programs may consider the use of advanced equipment either through direct purchase or cooperative agreement with other states.

APPENDIX A

MODEL STATE LAW

MODEL LAW FOR STATE SUPERVISION OF SAFETY OF DAMS AND RESERVOIRS

It is the intent of the legislature by this Act to provide for the regulation of dams and reservoirs exclusively by the state for the protection of public safety.

Chapter 1000. Definitions: The definitions in this chapter govern the construction of this Act.

1001. “Abandonment” means to render a dam non-impounding by dewatering and filling the reservoir created by that dam with solid materials and by diverting the natural drainway around the site.

1002. “Adverse Consequences” means negative impacts that may occur upstream, downstream, or at locations remote from the dam. The primary concerns are loss of human life, economic loss (including property damage), disruption of public utilities, and environmental impact.

1003. “Agency” means that agency, department, office, or other unit of state government designated by state law to be responsible for implementation and administration of this Act. (This section to be replaced in enactment of the law by a reference to the state unit created or selected to implement and administer the Act. The state unit created or selected to implement and administer the Act may consist of regular state employees or specialists and consultants, including consulting engineering firms or organizations.)

1004. “Alterations” or “repairs” means only alterations or repairs to existing dam and appurtenant structures that affect the safety of the dam or reservoir, as determined by the agency.

1005. “Application Approval” means authorization in writing issued by the agency to an owner who has applied to the agency for permission to construct, reconstruct, enlarge, repair, alter, remove, maintain, operate or abandon a dam and which specifies the conditions or limitations under which work is to be performed by the owner or under which approval is granted.

1006. “Appurtenant works” include, but are not limited to, such structures as spillways, either in the dam or separate therefrom; the reservoir and its rim; low level outlet works; and water conduits such as tunnels, pipelines or penstocks, either through the dam or its abutments.

1007. “Breach” means partial removal of a dam, creating a channel through the dam to the original stream bottom elevation.

1008. “Certificate of Approval to Impound” means authorization in writing issued by the agency to an owner who has completed construction,

alteration, breach, removal or abandonment, and determine what further fee, if any, is required.

6170. All filing fees and other charges collected under the provisions of this Act shall be paid into a special fund in the state treasury, to be available to the agency for expenditure for the purposes authorized by this Act.

6180. The fees provided for in this article shall be required of all owners as defined in Chapter 1000 of this Act.

Article 6200. Annual Registration Fees and Inspection Fees

6210. Owners of existing dams holding certificates of approval to impound shall be assessed an annual registration fee as established in the regulations. Existing certificates of approval to impound will be extended for one year upon receipt of the annual registration fee. Any certificate of approval to impound is void without notification to the person holding the certificate of approval to impound when the annual registration fee is more than forty-five (45) days past due. Resubmission of an application is required where a certificate of approval to impound has become void due to failure to pay the appropriate annual registration fee within 45 days of the date due; and

6220. Dam owners shall pay a fee following state inspections conducted in accordance with Section 8130 of this Act.

Chapter 7000. Inspections and Certificates of Approval to Impound

Article 7100. New, Reconstructed or Enlarged Dams and Reservoirs

7110. The design engineer shall be represented during construction as specified in Section 7610. Immediately upon completion of a new or reconstructed dam and reservoir, or enlargement of a dam and reservoir, the owner shall give a notice of completion to the agency. The owner shall file with the agency a statement signed by the design engineer certifying that the project was constructed, reconstructed or enlarged in conformance with approved plans and specifications, accompanied by supplementary drawings or descriptive matter signed and sealed by the design engineer showing or describing the dam and reservoir as actually constructed, reconstructed, or enlarged. Such supplementary materials shall include, but not be limited to, the following:

A. A record of all geological boreholes and grout holes and grouting;

B. A record of permanent location points, benchmarks and instruments embedded in the structure;

C. A record of tests of concrete or other material used in the construction, reconstruction, or enlargement of the dam and reservoir; and

D. A record of initial seepage flows and embedded instrument readings.

Article 7200. Certificates of Approval to Impound

7210. Each dam owner must hold a valid certificate of approval to impound in order to legally impound water under the laws of this State.

7220. A certificate of approval to impound shall be issued by the agency upon a finding by the agency that the dam and reservoir are safe to impound water within the limitations prescribed in the application approval. No water shall be impounded by a dam or reservoir prior to issuance of a valid certificate to impound.

7230. Each certificate of approval to impound issued by the agency under this Act shall contain such terms and conditions as the agency may prescribe.

7240. The agency shall revoke, suspend, or amend any certificate of approval to impound whenever it determines that the dam or reservoir constitutes a danger to life and property. Upon the agency's revocation of a certificate to impound, the owner of the dam must take action within time limits specified by the agency to alleviate the hazard associated with the dam.

7250. Before any certificate of approval to impound is revoked by the agency, the agency shall hold a public hearing. Written notice of the time and place of the hearing shall be mailed, at least 10 days prior to the date set for the hearing, to the holder of the certificate to impound. Any interested person(s) may appear at the hearing and present their views and objections to the proposed action. Any petition to a court of appropriate jurisdiction to inquire into the validity of action of the agency revoking a certificate of approval to impound shall be commenced within 30 days after the date the agency issues its decision to revoke the owner's certificate to impound. An appeal of the agency's decision shall not be constitute an automatic stay of the agency's action.

Article 7300. Repaired or Altered Dams and Reservoirs

7310. Immediately upon completion of the repair or alteration of any dam or reservoir, the owner shall give written notice of completion to the agency. The design engineer shall file with the agency a written statement certifying that the repairs or alterations were completed in accordance with the approved plans and specifications. The statement shall be accompanied by supplementary drawings

and descriptive matter signed and sealed by the design engineer describing the dam and reservoir as repaired or altered together with such maps, data, records, and information pertaining to the dam and reservoir as repaired or altered.

7320. A certificate of approval to impound shall be issued upon a finding by the agency that the dam and reservoir are safe to impound water within the limitations and conditions prescribed in the application approval. Pending issuance of a new or revised certificate of approval to impound, the owner of the dam or reservoir shall not cause the dam or reservoir to impound water beyond the limitations or conditions prescribed in the existing application approval.

Article 7400. Removal, Breach, or Abandonment of Dams and Reservoirs

7410. Upon completion of the removal, breach, or abandonment of a dam, the design engineer shall file with the agency a written statement certifying that the breach, removal or abandonment was completed in accordance with the approved plans and specifications.

7420. Before final approval of the removal of a dam or reservoir is issued, the agency shall inspect the site of the work and determine that all work was accomplished in substantial conformance with the approved application.

7430. Following the removal of a dam or reservoir, the agency may report this event in a timely manner to the National Inventory of Dams (NID)

Article 7500. Complaints of Unsafe Conditions

7510. Upon receipt of a written complaint alleging that the person or property of the complainant is endangered by the construction, reconstruction, enlargement, repairs, alterations, maintenance, or operation of any dam and reservoir, the agency shall cause an inspection and investigation to be made unless the data, records, and inspection reports on file are found adequate to make a determination whether the complaint is valid. The complainant shall be provided with a copy of the official report of the inspection and investigation.

7520. If the agency finds that an unsafe condition exists, the agency shall notify the owner to take such action as is necessary to render or cause the condition to be corrected, including breaching or removal of any dam found beyond repair. If the owner is unavailable or unresponsive, the agency may commence action under Chapter 8000, Article 8200 – Emergency Actions.

Article 7600. Inspection During Progress of Work

7610. During the construction, reconstruction, enlargement, repair, alteration, breach, abandonment or removal of any dam or reservoir, the agency shall make periodic inspections for the purpose of ascertaining compliance with

ATTACHMENT C

Corps of Engineers FAQ

Levee Certification

Release of EC 1110-2-6067
"USACE Process for the National Flood Insurance Program (NFIP) Levee System Evaluation"

Frequently Asked Questions

1. What does Engineer Circular (EC) 1110-2-6067, *USACE Process for the National Flood Insurance Program (NFIP) Levee System Evaluation*, address?

The EC provides a consolidated document that will guide US Army Corps of Engineers (USACE) procedures for levee system evaluations in support of National Flood Insurance Program (NFIP) as administered by the Federal Emergency Management Agency (FEMA). This EC supplements and clarifies existing policy, procedures, and technical guidance. Technical and procedural guidance in this EC are intended solely for use in USACE process for NFIP levee system evaluations of existing and new levee systems; it is not intended as design guidance.

2. What is a 'NFIP levee system evaluation'?

The purpose of a NFIP levee system evaluation is to determine how flood hazard areas behind levees are mapped on FEMA Flood Insurance Rate Maps (FIRMs). The resultant maps are used to determine flood insurance rates; federal, state, and local floodplain management requirements; and other floodplain management decisions. It should be noted here that the definition of 'NFIP levee system evaluation' for the purposes of USACE application under this EC is consistent with definitions in 44 CFR 65.10. If a positive finding is made in an NFIP levee system evaluation, FEMA will use this information to determine how the floodplain behind the levee system is mapped.

A **NFIP levee system evaluation determination** is a technical finding by a registered professional engineer that, for the floodplain in question, there is, or is not, a reasonable assurance that the levee system will exclude the 1% annual chance exceedance flood from the leveed area. A 'there is' answer leads to a positive finding and support for accreditation. An 'is not' answer means a negative finding for NFIP levee system evaluation thus, accreditation is not supported.

3. What is the difference among levee evaluation, certification, inspection, and accreditation?

With the release of this EC, USACE will begin using "NFIP levee system evaluation" as opposed to "levee certification" to describe the process USACE is following to evaluate a levee system for NFIP mapping purposes.

"Levee Certification" is commonly used to describe the submittal of all required data to FEMA to demonstrate the levee meets requirements in 44 CFR 65.10.

Inspection of a levee, as related to USACE's Levee Safety Program, is a visual inspection conducted to verify that the levee system is being properly operated and maintained. The result of these inspections does not equate to a "levee certification" or "NFIP levee system evaluation."

Accreditation means FEMA has verified that all the documentation to demonstrate that a levee system meets 44 CFR 65.10 has been submitted and has shown the levee on the Flood Insurance Rate Map (FIRM) as providing reasonable assurance of excluding the 1% annual chance exceedance flood (or base flood).

4. Why is USACE using the term "NFIP levee system evaluation" instead of "levee certification"? Do these two terms mean the same thing?

"NFIP levee system evaluation" emphasizes the true purpose of evaluating the complete levee system's status with regard to requirements of both 44 CFR 65.10 and USACE guidelines. This choice better supports FEMA's definition of "certification" defined in 44 CFR 65.2(b), which focuses on certification of analysis and data and is not meant to imply a warranty or guarantee. This change does not affect FEMA's requirements for mapping areas behind levee systems. The change, however, better describes the purpose and emphasis that "certification" does not mean a guarantee of safety from flooding.

5. Does this EC apply to all "levee certifications" submitted to FEMA?

No. It only applies to NFIP levee system evaluations performed by USACE.

6. Will FEMA accept documentation from USACE using the term "NFIP Levee System Evaluation" instead of "levee certification"?

Yes. In 44 CFR 65.10, states, "In lieu of these structural requirements, a Federal agency with responsibility for levee design may certify that the levee has been adequately designed and constructed to provide protection against the base flood." USACE developed the EC to outline the process it will follow to meet this statement of the CFR. However, instead of using "certify", USACE will state "**has met all the requirements** established by USACE for determining that the levee system can be reasonably expected to exclude a flood event with a 1% annual chance exceedance…" or "USACE finds the levee system is **not in accordance** with all of the NFIP levee system evaluation requirements established by USACE for determining that the levee system can be reasonably expected to exclude a flood event with a 1% annual chance exceedance."

7. If a private architect-engineer firm would like to use this USACE EC, does the term "levee certification" or the word "certify" have to be in the documentation they submit to FEMA to comply with 44 CFR 65.10?

No. The purpose of "certification" is defined by FEMA in 44 CFR 65.2(b) as follows,

"For the purpose of this part, a certification by a registered professional engineer or other party does not constitute a warranty or guarantee of performance, expressed or implied. Certification

of data is a statement that the data is accurate to the best of the certifier's knowledge. Certification of analyses is a statement that the analyses have been performed correctly and in accordance with sound engineering practices. Certification of structural works is a statement that the works are designed in accordance with sound engineering practices to provide protection from the base flood. Certification of "as built" conditions is a statement that the structure(s) has been built according to the plans being certified, is in place, and is fully functioning."

For example, FEMA will accept statements, accompanying the required backup data and information, from a professional engineer such as "To the best of my knowledge, the _____ levee system has been designed and constructed in accordance with sound engineering practices to provide protection from the base flood, is in place, is fully functional, and meets the requirements of 44 CFR 65.10 as demonstrated by the attached supporting documentation."

8. Is FEMA planning to change how it uses the term "levee certification" to match the USACE new term of "NFIP levee system evaluation"?

FEMA will continue to implement 44 CFR 65.10 as written, but supports the USACE EC. The EC only applies to USACE NFIP levee system evaluation efforts and complements the CFR.

9. What happens to the draft Engineer Technical Letter (ETL) 1110-2-570 that USACE issued in September 2007 to address "certification"?

The EC supersedes this draft ETL and all other related policy memoranda related to "certification". The draft ETL (1) provided interim guidance to Corps offices for their use in supporting the FEMA NFIP, and (2) provided an opportunity to solicit comments and suggestions for improving the content and applicability of the ETL. The review generated more than 1,100 comments which were addressed and incorporated into the EC. After the review, the policy and guidance that evolved aligned better with an EC than an ETL (per OM 25-1-51).

10. Does the EC contain "new" guidance not presently contained in other published USACE documents?

The EC consolidates and summarizes existing policy and guidance previously distributed among various USACE documents and provides policy and guidance about topics not previously covered in relation to "levee certifications", such as,

a. Use of "NFIP levee system evaluation" rather than "certification" as it emphasizes the complete levee system's status with regard to requirements of both 44 CFR 65.10 and USACE guidelines.
b. Requiring submittal to FEMA of an evaluation report, as opposed to issuing just a "certification" letter.
c. Clarification of technical areas to include earthen closures, ice, seismic criteria, channels, and flood fight activities.
d. Requiring a minimum of two feet of freeboard to match FEMA's minimum requirement.

11. With this EC, is USACE changing its policy related to performing NFIP levee evaluations for local sponsors?

No. The purpose of these levee evaluations is to determine how FEMA will map the floodplain behind the levee for flood insurance purposes as part of the NFIP. Since the local community is responsible for administering the requirements of the NFIP and maintaining the levee, providing the documentation to meet 44 CFR 65.10 is a local project/system sponsor responsibility. In some cases, USACE Levee Safety Program activities will help inform and support the local's efforts.

There are two conditions when USACE will budget for and conduct these evaluations when requested by the local sponsor: (1) USACE operates or maintains the levee system (such as the Mississippi River & Tributaries levees) or (2) USACE has an active levee design/construction project underway (such as New Orleans).

USACE may perform this evaluation using funds provided by non-Federal sponsors, provided that it can be demonstrated that USACE is uniquely equipped to do so and that such services are not reasonably and quickly available through ordinary business channels (Thomas Amendment).

Consult ER 1140-1-211, *Work for Others – Support for Others: Reimbursable Work,* 22 June 1992 for situations involving other federal agencies providing funds for this work.

12. How does the EC relate to FEMA's Title 44 of the Code of Federal Regulations, Section 65.10 (44 CFR 65.10), *Mapping Areas Protected by Levee Systems*?

CFR 65.10, published in the mid-1980s, is the basic FEMA regulation prescribing requirements and criteria for levee system evaluations (certifications). CFR 65.10 requires that structural components of the levee system be certified by a registered professional engineer. A provision of the regulation permits federal agencies, such as USACE, with levee design and construction competence to make certification determinations. EC 1110-2-6067 is consistent with and founded on the principles of 44 CFR 65.10 while updating methods and references to current USACE practices and criteria.

13. What coordination with FEMA has taken place with this EC?

The first USACE national guidance related to levee system evaluation (formerly certification) was issued in April 1997. This policy, coordinated with and accepted by FEMA, required the use of risk analysis (statistically-based levee height) for levee system evaluations performed by USACE. Since then, all supplemental USACE guidance for levee system evaluation has been coordinated with FEMA. For this EC, FEMA was a partner on the Project Delivery Team (PDT) and the Independent Technical Review process. Joint USACE/FEMA regional webinars will be conducted as part of the release of this EC.

14. Is there a plan to revise and update the EC in the near future as lessons learned from Katrina/New Orleans become more solidified, and as the technical methods advance both in the U.S. and Internationally?

Yes, we anticipate there will be periodic updates as advances are made in the engineering profession in relation to flood and hurricane storm damage reduction systems. Hurricanes Katrina and Rita brought the subject of flood risk management to the forefront of public interest and debate. Lessons learned from these events include the need to apply a systems approach and risk-informed decision making to flood risk management. Flood risk management is dynamic and constantly changes as we learn more about floods, storms and subsidence; the performance of our aging infrastructure; the engineering profession and the effects of increasing development behind flood and storm damage reduction systems. USACE is constantly working to improve its understanding of the loading on levee systems, how they respond to floods, and to advance the state-of-the-art of design and construction. The EC will be incrementally improved to incorporate these new advances.

15. What happens to existing previous USACE "certifications"?

District offices will assess situations in which USACE documentation was submitted to FEMA and was used by FEMA for accreditation of the levee system in order to ensure policy in the EC has been met. If the existing USACE documentation is not in compliance with the EC, USACE will notify the sponsor and FEMA that the current USACE documentation on file can no longer be used to support the current accreditation.

16. Who is the point of contact for the EC?

Questions regarding this EC should be directed to the district Levee Safety Officer (LSO) or district Levee Safety Program Manager (LSPM).