



# 2016 NW Hydro Forum



# EAP Chapter 6 Changes

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# Why New Guidelines?

- Revisions were needed to be consistent with the new Federal Guidelines for Dam Safety – Emergency Action Planning for Dams, FEMA P-64, July 2013



## Federal Guidelines for Dam Safety

Emergency Action Planning for Dams

FEMA 64 / July 2013



# Why New Guidelines?

## Other Changes Included:

- Incorporating several FERC initiatives on EAPs which occurred since Chapter 6 was last revised in 2007.
- Making exercise terminology consistent with the Homeland Security Exercise and Evaluation Program (HSEEP).
- Including additional guidance and examples on inundation maps.



# Primary Changes to Guidelines

- New Section describing the 4 Step EAP response process.
- Covers emergency response from incident detection through termination and follow-up



# Primary Changes to Guidelines

- Step 1: Incident detection, evaluation, and emergency Level determination
- Step 2: Notification & communication
- Step 3: Emergency actions
- Step 4: Termination and follow-up



# Step 1 – Emergency Levels

- Modification of the previous 3 Emergency Levels to Match FEMA P-64
  - High Flow
  - Non-Failure
  - Potential Failure
  - Imminent Failure



# Step 1 – Emergency Levels

- The reason for this change was to:
  1. Clarify procedures for notifying agencies about high flows
  2. Describe procedures for incidents that wouldn't necessarily lead to failure but still needed additional investigation
  3. Eliminate the lettering system which confused emergency responders and was inconsistent among dam safety organizations.



# Step 1 – Emergency Levels

## High Flow Emergency Level

- Indicates flooding is occurring on the river system, but no threat to integrity of dam
- Conveys to outside agencies that downstream areas may be affected by dam's releases.
- The EAP should also include a High Flow Operations Table.
- Must remind all parties that dam is NOT in danger of Failing!



# Step 1 – Emergency Levels

## Example High Flow Operations Table

<b># of Gates Open</b>	<b>Flow (cfs)</b>	<b>Downstream Impacts</b>	<b>Organizations to be Notified</b>
1-4	<10,000	None	None
5	12,500	Minor riverbank flooding	Town Police, National Weather Service, Downstream Dam Owner
6	15,000	Minor flooding of local roads near river	Town Police, National Weather Service, Downstream Dam Owner
7	17,500	Significant flooding of local roads near river	Town Police, National Weather Service, Downstream Dam Owner
8	20,000	State Highway 92 bridge flooded, significant flooding of local roads and houses near river	Town Police, National Weather Service, Downstream Dam Owner, State Emergency Management Authority



# High Flow – Webber Dam



# Ionia County Fairgrounds

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# Step 1 – Emergency Levels

## Non-Failure Emergency Level

- An event at the dam that will not, by itself, lead to failure, but requires investigation and notification by internal and external personnel.
- Examples include:
  - New Seepage or Leakage on Downstream Toe
  - Presence of unauthorized personnel at dam
  - Malfunction of a gate



# Step 1 – Emergency Levels

## Potential Failure Emergency Level

- Conditions are developing at a dam that can lead to failure.
- Should convey that time is available for analysis, decisions and actions.
- Examples Include:
  - Rising reservoir levels approaching the non-overflow dam crest
  - Transverse Cracking of an Embankment Dam
  - A Verified Bomb Threat



# Step 1 – Emergency Levels

## Imminent Failure Emergency Level

- Time has run out and the dam has failed, is failing, or is about to fail.
- Once decision has been made that there is no time to prevent failure, the Imminent Failure warning must be issued.
- For purposes of evacuation, authorities should assume worst-case condition that failure has already occurred.



# Step 2 – Notification and Communication

- After Emergency Level is Determined, Notifications are made via the EAP's Notification Flowchart(s).
- In developing notification procedures, licensees should coordinate closely with EMA's.
- After initial notification, periodic status reports should be made as the situation develops.



# Step 3 – Emergency Actions

- Actions taken by licensee to save the dam and minimize impacts to life and property and the environment.
- During this step, there is a constant process of taking actions, assessing the situation, and communicating to others.



# Step 4 – Termination and Follow-up

- This step should explain the process and criteria for determining that the incident with the dam has been resolved.
- Following termination of the incident, the licensee and EMAs should conduct and after action review.



# Other Notable Changes

- Section G - Preparedness
  - Four new levels added
    1. Evaluation of detection & response timing
    2. Alternate sources of power
    3. Training and exercising
    4. Public awareness & communication
  - Other seven levels have minor changes



# Other Notable Changes

- Section H - Inundation Maps
  - Better explanation of when one inundation zone can be used instead of two zones
  - Dam break information can be included on index map page, with simpler messages to convey hazard on individual pages.
  - Duration of inundation and velocities can be included on maps (optional)
  - Appendixes M, N, and O provide 2-D inundation mapping guidance and examples



# Other Notable Changes

- EAP Exercises – now seven types of exercises consistent with HSEEP
  - Discussion-based exercises
    1. Seminar
    2. Workshop
    3. Tabletop
    4. Games
  - Operations-based exercises
    5. Drill
    6. Functional
    7. Full-Scale



# Table Top Exercises

## C. Requirements

- Recommends having TT prior to comprehensive exercise (at least 30 days)
- Option of holding TT the year before
- Option of holding TT the same day if licensee can't get participants together two separate days
- Option of performing TT as part of annual seminar



# Functional Exercise

## D. Preparation

- Discusses how to create a Master Scenario Events List (MSEL)
- For FE, an exercise Plan can be prepared for each participant



# Time Sensitive EAP's

- New section discusses:
  - Sudden Failure Assessment and how to improve response time through:
    - Detection
    - Verification
    - Notification
    - Emergency Management Authority Response
    - Public Education
    - Annual reporting



# EAP Exemption Requirements

- Updated annual verification requirements
  - Annually perform field reconnaissance
  - Annually submit a letter to RE
    - Discuss results of field reconnaissance
    - Requesting continued exemption from filing (Section 6-2.2.7), if still eligible
    - Include separate enclosure with annual verification with contact list and statement that it was verified accurate



# TCEAP

- Added a requirement to TCEAP
  - A notification list of emergency response authorities
  - A plan drawing showing proposed arrangement of structure
  - Location of safety devices and escape routes
  - Action levels (based on Construction PFMA), when plan is activated and when evacuation will occur
  - Brief description of testing procedures for the plan



# EAP Status Report

- The date(s) of:
  - Annual comprehensive review was performed
  - Last full reprint
  - Annual seminar
  - Current Sudden Failure Assessment (and results)
  - Public education (with description)
- Appendix 6-C has a sample



# Other Changes

- A complete listing of both major and minor changes to the EAP Guidelines can be found at:  
<http://www.ferc.gov/industries/hydropower/safety/guidelines/eng-guide/chap6.asp>



# Answers to Common Questions

- The EAP documents submitted to the FERC are treated as Critical Energy Infrastructure Information (CEII). The treatment of sensitive information in EAP documents provided by licensees to other plan holders is based on the licensees' discretion and responsibility.



# Answers to Common Questions

- Providing different versions of the EAP that are tailored to the needs of specific plan holders is not required but is often beneficial.
- The Summary of EAP Responsibilities section at the beginning of the revised EAP outline is optional.
- The new EAP guidelines contain several appendices that were included in the revised FEMA 64 document and are considered optional. See Section 6-11 for clarification.



# Answers to Common Questions

- The inundation mapping appendix (6-N) is provided to illustrate the state-of-the-practice for inundation mapping. The revised guidelines do not mandate that all licensees submit new inundation maps.
- Licensees that provide the information shown in the Appendix 6-C example will likely be compliant with the revised annual requirements.



# QUESTIONS?

