

### **IMPORTANT REQUEST TO USSD MEMBERS:**

USSD members are asked to prepare comments on the recently issued FERC Notice of Proposed Rule Making (NOPR) and the Notice of Availability (NOA) of four draft chapters of the Engineering Guidelines for the Evaluation of Hydropower Projects (Chapters 15, 16, 17, and 18). Your efforts to review the documents and provide input supports USSD's vision of *a world where all dams and levees are safe and valued by the communities they serve.*

### **RESPONSE DEADLINE:**

USSD requests your written input by **Monday September 14, 2020** in order to consolidate and provide a formal submittal prior to the close of the comment period.

### **SUBMIT TO:**

Submit via email to: [Sharon@ussdams.org](mailto:Sharon@ussdams.org) , and include in the Subject Line: FERC NOPR.

Members can submit comments directly to FERC.

### **OVERVIEW:**

The NOPR presents a comprehensive update to 18 CFR Part 12 Safety of Water Power Projects and Project Works. The four new draft chapters of the Engineering Guidelines for the Evaluation of Hydropower Projects address: with Chapter 15, the content of the Supporting Technical Information Document (STID); with Chapter 16, the purpose and scope of a Part 12D Inspection; with Chapter 17, potential failure modes (PFM) that result in unintended releases of water in addition to a complete failure; and, with Chapter 18 developing a sense of the risks associated with each potential failure mode and provide consistent and transparent dam safety decisions. The NOPR and the four new chapters are intended to improve the safety of FERC licensed water power projects, and address issues identified and lessons learned by the Oroville Independent Forensic Team (IFT) and the FERC After-Action Panel (FAAP).

Commenters should provide specific, meaningful comments or suggestions that focus on:

- 1) specific sections requiring clarification
- 2) best practices related to the review, inspection, and assessment of water power projects.
- 3) the matters and issues proposed to be adopted, including any related matters or alternative proposals that commenters may wish to discuss.
- 4) the need for the proposed information in draft Chapters 15 through 18 of the Engineering Guidelines

- 5) whether the information will have practical utility to enhance FERCs ability to protect the safety of dams and the public; and to reduce the risk to life, health, and property associated with water power projects.

**ADDITIONAL INFORMATION:**

All information related to the NOPR and the draft guidelines can be found directly on the FERC website (<http://www.ferc.gov>) using the eLibrary link. Click on the eLibrary link, click on “General Search” and enter the docket number, excluding the last three digits in the Docket Number field (i.e., RM20-9). The documents were published on July 24, 2020.

- Docket No. RM20-9-000 – Notice of Proposed Rulemaking, “Safety of Water Power Projects and Project Works”
- Docket No. AD20-23-000 – Chapter 18 Level 2 Risk Analysis
- Docket No. AD20-22-000 – Chapter 17 Potential Failure Modes Analysis
- Docket No. AD20-21-000 – Chapter 16 Part 12D Program
- Docket No. AD20-20-000 – Chapter 15 Supporting Technical Information Document

**SUMMARY:**

Following is a summary of the NOPR and the 4 draft chapters of the Engineering Guidelines for the Evaluation of Hydropower Projects. This is intended to serve as a guide to some of the major changes and improvements in the FERC dam safety program. The summary is not intended to be a complete rendition of the documents. USSD members are strongly encouraged to read the documents in their entirety.

1) NOPR for 18 CFR Part 12 – Safety of Water Power Projects and Project Works

A) Subpart A – General Provisions

- A.1) Section 12.3 Definitions - Revision will update or add definitions
- A.2) Section 12.3(b)(4) – Revision will update 2 conditions, add to the list of conditions affecting the safety of project works, and add new definitions.
- A.3) Other revisions are minor for consistency and to update internal references.
- A.4) New Section 12.4(d) will make clear that a licensee’s failure to comply with any order or directive issued under part 12 may result in sanctions and enforcement under FPA Section 309 and FP Section 31.

## B) Subpart B – Reports and Records

- B.1) Section 12.10(a)(1) – Revision will require oral reports affecting safety of a project or project work are made within 72 hours of discovery of the condition. Reporting of the incident must not inhibit emergency response to the incident in any way.
- B.2) Section 12.10(b) - Revision will require additional reports of public safety-related incidents that involve deaths, serious injuries, or rescues. More precise terminology will be used, “project-related incident” instead of “project-related accident”; and, “project-related” will be clarified to mean an incident is project-related only if it occurs at project works, involves changes in water levels results from operation of project works, or is otherwise attributable to the project or its operation.

## C) Subpart C – Emergency Action Plans

- C.1) Minor revisions to Sections 12.20, 12.22, and 12.24 to ensure consistency with filing guidelines on website, terminology in Engineering Guidelines, and cross-references in other sections.

## D) Subpart D – Inspection by Independent Consultant

- D.1) This subpart will be revised entirely. The revision is intended to help prevent future dam safety incidents that could potentially result in significant economic impacts including financial costs associated with loss of life or property damage, major project repairs, and lost revenue due to the inability to operate the project.
- D.2) FERC proposes to implement 2 tiers of part 12 inspections in addition to staff’s regular inspections.
  - D.2.1) This includes a comprehensive assessment (CA) and a periodic inspection (PI) each performed at a 10-year interval with a PI midway between comprehensive assessments.
  - D.2.2) This will maintain the 5-year interval between part 12 inspections and mirror’s FEMA’s recommendation that formal inspections be conducted at intervals not to exceed 5 years.
  - D.2.3) The alternating two-tier structure is similar to those used by Reclamation and Army Corps.

- D.2.4) Comprehensive assessment will require a more in-depth review than current part 12 inspection; formally incorporate existing PFMA process, and will require a SQRA.
- D.2.5) Periodic inspection will have a narrower scope than current part 12 with a focus on performance of project works between comprehensive inspections.
- D.3) FERC will change the process used by D2SI to evaluate qualifications of Part 12 Independent Consultants (IC).
  - D.3.1) Currently licensee submits resume of IC to D2SI for approval.
  - D.3.2) New process requires licensee to submit an Independent Consultant Team (ICT) proposal including 1 or more ICs and additional engineering or scientific personnel as needed; and must demonstrate team members possess appropriate level of expertise for the specific project under consideration. This is consistent with FEMA recommendation for an “inspection team” chosen on a site-specific basis considering nature and type of dam; and should comprise individuals having appropriate specialized knowledge in structural, mechanical, electrical, hydraulic, embankment design, geology, concrete materials, and construction procedures.
  - D.3.3) Minimum qualification for the designated ICs remains – PE with minimum 10 years’ experience in “dam design, construction, and investigation of the safety of existing dams”. This would not apply to other supporting members of the IC team.
- D.4) Revisions to Section 12.30 are consistent with existing D2SI practice AND will clarify subpart D may apply to projects that do not have a dam; the height and storage thresholds will only apply to dams; the high hazard potential will apply to all project features; the project development would be subject to subpart D if any portion of a project feature has a high hazard potential; and subpart D would apply to a project development if FERC determines an inspection is required for reasons not listed.
- D.5) Revisions to Section 12.31 - Definitions and waiver

- D.5.1) Provides D2SI Director authority to grant a waiver from the ten-year experience requirement in the definition of independent consultant.
- D.5.2) Maintains the experience and licensure requirements for an independent consultant and includes 3 separate requirements regarding the professional relationship between IC and licensee to ensure consultants are not responsible for reviewing work products to which they contributed:
  - i. IC is not an employee of licensee or affiliates.
  - ii. IC has not been an employee of licensee within 2 years prior to performing the inspection.
  - iii. IC has not been an agent acting on behalf of the licensee for a manner and time period defined in the Engineering Guidelines. The guidelines provide examples FERC staff has discretion to use to make decisions because thresholds for scope or duration of services are not established in the definition.
- D.5.3) Update the definition of high hazard potential to be consistent with FEMA's Hazard Potential Classification System for Dams. The new definition will ensure it is applicable to dams, canals, and other water conveyances, or portions thereof; and refers to Engineering Guidelines for specific criteria that result in a classification of low, significant, or high hazard potential.
- D.5.4) Add a new definition for independent consultant team to ensure each review is conducted by qualified personnel so FERC can reasonably expect potential issues relating to project safety or stability to be identified. The IC team will be comprised of one or more independent consultants and additional engineering and scientific personnel as needed. Collectively the team shall have expertise commensurate with the scale, complexity, and relevant technical disciplines of the project and type of review being performed (periodic inspection or comprehensive assessment). FERC will have a "higher expectation" on qualifications and the collective experience and expertise of the IC team for comprehensive assessments compared to periodic inspections; for projects with higher consequences or total project risk; projects with a greater number of or more technically diverse or

challenging features; and projects with a history of unusual or adverse performance.

- D.6) Revisions to Section 12.32 – General Inspection Requirement
  - D.6.1) New requirement for periodic inspection (PI) and comprehensive assessment (CA) with a report followed after each.
  
- D.7) Revision to Section 12.33 – Exemption
  - D.7.1) Rescinds any exemption from subpart D issued prior to the effective date of the proposed rule. A licensee is allowed to reapply for an exemption with an updated justification taking into consideration the evolution of the state of the practice of dam safety and considering potential failure modes, consequence, and total project risk.
  
- D.8) Revision to Section 12.34 – Approval of Independent Consultant Team
  - D.8.1) Revision will stipulate licensee must obtain written approval of IC team from Director D2SI prior to performing periodic inspection or comprehensive assessment. Pre-approval occurred in practice but was not stipulated.
  - D.8.2) Revision will require licensee to submit detailed IC team proposal 180 days prior to inspection or assessment. Existing reg states 60 days but in practice FERC requests 6 months. This change will codify the current practice.
  - D.8.3) Revision will require licensee submit documentation of experience and qualifications for all members of IC team, including 1 or more independent consultants and additional contributing team members as needed. The goal is to allow FERC to evaluate depth and breadth of team's experience and ensure it is commensurate with the scale, complexity, and technical disciplines of the project and type of review being performed.
  - D.8.4) Revision will give FERC authority to disapprove of an IC team member regardless of demonstrated experience and qualifications, for good cause, such as having a report rejected by FERC within preceding 5 years. The goal is to ensure IC inspections are performed by qualified parties.

- D.9) Revision to Section 12.35 – Periodic Inspection
  - D.9.1) Section replaced entirely and the Revision will establish scope of Periodic inspection.
  - D.9.2) Scope will include review of prior reports, physical field inspection, review of surveillance and monitoring plan and data, review of dam and public safety programs.
  
- D.10) Revision to Section 12.36 – Report on Periodic Inspection
  - D.10.1) Section replaced entirely and the Revision will establish requirements for specific evaluations and the content of the periodic inspection report.
  - D.10.2) Will require initial and subsequent PI reports to meet the same standard. This will eliminate the practice of consultants incorporating previous consultant inspection reports by reference and only documenting information that has changed since the last report.
  
- D.11) Revision to Section 12.37 – Comprehensive Assessment
  - D.11.1) Section replaced entirely and the Revision will establish the scope of a Comprehensive Assessment.
  - D.11.2) Many components will be identical to or build upon the new Section 12.35 Periodic Inspection.
  - D.11.3) Scope will include review of prior reports and analyses of record; review of STID based on new Chapter 15 engineering guidelines; performance of PFMA based on new Chapter 17 engineering guidelines; performance of a risk analysis based on new Chapter 18 engineering guidelines; and a more detailed review of existing documentation , drawings, and monitoring data.
  
- D.12) Revision to Section 12.38 – Report on Comprehensive Assessment
  - D.12.1) Section replaced entirely and the Revision will establish the requirements for specific evaluations and the content of the Comprehensive Assessment report.
  - D.12.2) Will require initial and subsequent CA reports to meet the same standard. This will eliminate the practice of consultants incorporating previous consultant inspection reports by reference

and only documenting information that has changed since the last report.

D.12.3) Will require an evaluation of an analysis of the record to include an evaluation of the accuracy, relevance, and consistency with the current state of the practice of dam engineering and include clear documentation of the IC team's rationale. If the IC team is unable to review any analysis of record or disagrees with the analysis of record in any way, the IC must recommend new analyses.

D.13) Revision to Section 12.39 – Evaluation of Spillway Adequacy

D.13.1) Section replaced entirely and the Revision requires spillway adequacy evaluation in a stand-alone section to highlight importance of this evaluation.

D.13.2) Will include evaluation of the potential to misoperate, failure to operate, blockage of spillway, or debilitating damage to spillway, and the resulting effects on maximum reservoir level and potential for overtopping.

D.14) New Section 12.40 – Time for Inspection and Reports

D.14.1) Incorporates most of the previous Section 12.38 timelines and will establish a 10-year interval between comprehensive assessments and requires a periodic inspection to be performed within 5 years following a comprehensive assessment.

D.14.2) The D2SI Regional Engineer will have the authority to require whether the initial report filed after January 1, 2021 will be a comprehensive assessment or a periodic inspection to balance the number of comprehensive assessments due each year over the 10-year cycle.

D.14.3) The first comprehensive assessment must be completed and the report filed by December 31, 2034.

D.15) New Section 12.41 – Corrective Measures

D.15.1) Retains provisions previously provided in Section 12.39 (post-inspection corrective measures) and Section 12.36 (emergency corrective measures) into a single section.

- D.15.2) Revision will require licensee's plan and schedule to address IC recommendations and include investigation as an option for licensee to implement.
- D.15.3) Revision will require any emergency corrective measures are documented in the corrective plan and schedule required in this part.

E) Subpart E – Other Responsibilities of Applicants or Licensee

- E.1) Revision includes redesignating sections as 12.50 to 12.54 to accommodate additions to Subpart D.
- E.2) Section 12.52 (former 12.42) – Revised to codify existing guidance that D2SI may require a licensee to submit a public safety plan that documents the installation, operation, and maintenance of public safety devices.
- E.3) Section 12.54 (former 12.44) – Revised to replace term “periodic inspection” with generic “an inspection” to avoid confusion with new requirement for a “periodic inspection” (PI) defined and described in Subpart D.

F) Subpart F – Owner's Dam Safety Program

- F.1) This Subpart is added to consolidate and codify existing guidance and require licensees of one or more high hazard potential dams to prepare, maintain, file with FERC, and periodically review and update an Owner's Dam Safety Program; and, designate a person responsible for overseeing day-to-day implementation of the dam safety program.
- F.2) The goal is to improve communication and understanding within licensee organizations as to their responsibilities for ensuring dam safety and protection of the public; and to contribute to the increased likelihood that potential dam safety issues are caught and addressed before they present an imminent danger to life safety or property.
- F.3) Section 12.60 – Applicability  
Codifies existing requirements for a licensee to submit an Owner's Dam Safety Program for a dam or other project feature with a high or significant hazard potential.
- F.4) Section 12.61 – Definitions  
Defines “Chief Dam Safety Engineer” and “Chief Dam Safety Coordinator”. Either of these positions must oversee the implementation of the Owner's

Dam Safety Program and have primary responsibility for ensuring the safety of the licensee's dams and other project features.

F.5) Section 12.62 – General Requirements

F.5.1) Establishes three general requirements for an Owner's Dam Safety Program.

- i. Designate either a Chief Dam Safety Engineer or a Chief Dam Safety Coordinator. Must have a Chief Dam Safety Engineer if it applies to one or more dams or project features with a high hazard potential. Engineer must be a PE.
- ii. Owner's Dam Safety Program must be signed by the owner and the Chief Dam Safety Engineer or Coordinator, as applicable.
- iii. Requires the Owner's Dam Safety Program be reviewed and updated on an annual basis

F.5.2) The owner can designate an outside party, such as a consultant, to serve as the Chief Dam Safety Engineer or Coordinator, though the owner retains ultimate responsibility for the safety and day-to-day implementation for their projects.

F.6) Section 12.63 – Contents of Owner's Dam Safety Program

F.6.1) Establishes minimum contents of the Program as reflected in the current D2SI guidance.

F.6.2) Revision will require inclusion of any additional information that may be prescribed in the Engineering Guidelines, draft chapter under development to be provided at a later date for review and comment.

F.7) Section 12.64 – Annual Review and Update

F.7.1) Specifies any Owner's Dam Safety Program must be reviewed by the licensee's dam safety staff and discussed with senior management on an annual basis; and any findings, analysis, corrective measures, or revisions be submitted to D2SI Regional Engineer.

F.8) Section 12.65 – Independent External Audit and Peer Review

- F.8.1) Requires an independent external audit and peer review must be completed at least once every 5 years for projects with a feature having a high hazard potential.
- F.8.2) D2SI must review and accept qualifications of review team in advance.
- F.8.3) Findings of audit or review must be documented in a report to be reviewed by licensee dam safety staff and senior management, and submitted to D2SI.

2) NOA Draft Chapter 15 – Supporting Technical Information Document  
Engineering Guidelines for the Evaluation of Hydropower Projects

Summary of Purpose and Major Changes

- A) The information in the new Chapter 15 will supersede what was previously contained in sections of Chapter 14, including Appendix I that pertain to the contents of the Supporting Technical Information Document (STID).
- B) The new guideline includes a thorough discussion of the required information for each section rather than examples with a level of relevant detail. This approach substantially increases the guidance provided to licensees for the development of an STID.
- C) The STID is a living document; is essential for the review and evaluation of the safety and performance of project works by licensees, consultants, and FERC; and, should be easily accessible and relevant for day-to-day used to serve as the compendium of knowledge and information about a project.
- D) There are new detailed expectations for the provision and maintenance of hard copies and digital records.
- E) In general, this chapter provides more detail for what to include in each section of the STID to ensure the summary information is comprehensive. Additional sections have been provided to document information related to appurtenant features, the requirements for documentation of which were not clearly established in previous guidance.
- F) Section 9 (formerly “Spillway Gates”) has been renamed as “Gates, Valves, and Other Reservoir Control Devices” and expanded accordingly. Documentation must be provided for all types of gates (not just radial spillway gates, as was often the case) as well as valves (e.g., Howell Bunger valves) and other reservoir control devices (e.g., flashboards).
- G) In each section, the guideline provides a list of the types of references to be provided on the digital reference. Previously, there was no clear guidance on what references were

to be provided digitally or how to organize them. This was identified as an issue by both the Oroville IFT and FAAP.

### 3) NOA Draft Chapter 16 – Part 12D Program

#### Engineering Guidelines for the Evaluation of Hydropower Projects

##### Summary of Purpose and Major Changes:

##### A) Chapter 16 Preface

- A.1) The information in the new Chapter 16 supersedes what was previously contained in sections of Chapter 14, including Appendix H, that pertain to the scope and performance of an Independent Consultant's Safety Inspection. Most of the information was in the Appendix and in the project-specific Part 12-D Inspection reminder letter from the D2SI Regional Engineer to the Licensee. However, this prior guidance was limited in scope and detail
- A.2) Revision consolidates that information and expands on it by incorporating findings and recommendations from the Oroville Independent Forensic Team (IFT) and FERC After-Action Panel (FAAP).
- A.3) FERC strongly recommends all parties involved in dam safety read the Oroville IFT and FAAP Reports in their entirety and carefully consider their contents and lessons learned. Excerpts are included in this Preface for emphasis.
- A.4) Revision formally incorporates a PFMA and Risk Analysis (RA) into the scope of the Part 12D Inspection.
- A.5) Revision adopts two distinct types of Independent Consultant inspections, a Periodic Inspection (PI) and a more rigorous Comprehensive Assessment (CA).

##### B) Section 16-2 Overview of Part 12D Program

- B.1) Revision requires Part 12D inspections will consist of a PI and a CA. There is some overlap between the two types of inspections and the guideline is structured to detail each type of inspection separately.
- B.2) Part 12D Inspections will remain on a five-year cycle and the revision requires the Inspection to alternate between a PI and a CA.
- B.3) Licensee responsibilities are outlined in Section 16-2.5.1. They must develop and submit to FERC a detailed Part 12D Inspection Plan describing the scope of the inspection, the proposed Independent Consultation Team (IC Team) and the proposed schedule. Licensees are not to influence the conclusions or recommendations of the IC or IC Team, and the IC must document any requests by the licensee to modify any conclusions or recommendations prior to finalization of the Part 12D Report.
- B.4) IC responsibilities are outlined in Section 106-2.5.2. They may be one or more ICs and they are responsible for signing and sealing the final report from the PI and the CA.

- B.5) Facilitator responsibilities are outlined in Section 16-2.5.3. An independent facilitate is required for a PFMA and RA workshop. The duties of those roles are detailed in new Chapters 17 and 18 respectively. A facilitator is not necessarily a member of the IC Team but they are required to be identified to FERC in advance.
  - B.6) FERC personnel responsibilities are outlined in Section 16-2.5.4. FERC dam safety personnel will typically perform their routine dam safety inspection alongside the IC Team and licensee personnel.
  - B.7) Table 2 outlines the timeline for Periodic Inspection. Table 3 outlines the timeline for Comprehensive Assessment.
- C) Section 16-3 ICs, IC Teams, and Part 12D Inspection Plans
- C.1) Section 16-3.2 details IC licensure and experience. The revision details constraints on the relationship status with the licensee.
  - C.2) Section 16-3.3 revision references new requirement in 18 CFR §12.34(a) for the licensee to obtain written approval from the Director of D2SI for the IC Team prior to performance of the Part 12D Inspection. The IC Team must include subject matter experts with demonstrated proficiency in the required technical disciplines specific to the project features and project setting.
- D) Section 16-4 Pre-Inspection Preparation Reports (PIPR)
- D.1) Section 16-4.1 revision references new requirement in 18 CFR §12.40 for the IC Team to prepare a PIPR for a PI and a CA. The goal of this preliminary document is to ensure the IC Team is adequately prepared to perform the site inspection and the PFMA/RA as applicable. FERC will review and evaluate the PIPR to determine if the IC Team is adequately prepared and will issue a formal response. FERC can postpone the first IC Team activity if the PIPR reveals a deficiency. Any postponement will not affect the due date for the Part 12D Report.
- E) Section 16-5 Periodic Inspections (PI)
- E.1) Section 16-5.1 revision references new requirement in 18 CFR §12.35 for the scope of a PI and the recommendation that an independent evaluation occur at least once every five years. A PI will typically occur five years after a CA and fulfills this recommendation.
  - E.2) This section provides comprehensive details on the scope of each component of the PI along with a discussion of the documentation requirements, and the minimum expected level of effort for preparation and performance of the PI and completion of the PIR.
- F) Section 16-6 Comprehensive Assessments (CA)
- F.1) Section 16-6.1 revision references new requirement in 18 CFR §12.37 for the establishment of a CA.

F.2) This section provides comprehensive details on the scope of each component of the CA along with a discussion of the documentation requirements, and the minimum expected level of effort for preparation and performance of the CA and completion of the CAR.

G) Section 16-7 Follow-up and Corrective Measures

- G.1) Section 16-7.1 revision references new requirement in 18 CFR § 12.41 to submit a plan and schedule to address the IC's recommendations within 60 days of the date the report is filed with the Regional Engineer.
- G.2) The IC's recommendations must include documentation of any identified risk reduction measures associated with PFMs classified as "urgent" or "credible" along with the licensee's plan and schedule to implement.
- G.3) Section 16-7.2 states a licensee is not required to carry out a recommendation or a risk reduction measure simply because an IC has recommended it. However, the licensee must provide adequate justification for taking no action or implementing an alternative.
- G.4) Section 16-7.3 revision references special provisions in new 18 CFR § 12.41(b) related to emergency corrective measures. This section retains requirements for the IC to immediately notify the licensee and the licensee to report the condition to the Regional Engineer, pursuant to 18 CFR § 12.10(a). And, any condition affecting the safety of a project or project work, as defined in 18 CFR § 12.3, requires emergency corrective measures.
- G.5) Section 16-7.5 revision requires a comprehensive assessment review meeting where the IC team is required to present a summary of their findings, conclusions, and recommendations to the licensee and the FERC within 60 days after the CAR is submitted by the licensee to FERC.

4) NOA Draft Chapter 17 – Potential Failure Mode Analysis (PFMA)  
Engineering Guidelines for the Evaluation of Hydropower Projects

Summary of Purpose and Major Changes:

- A) This new chapter will supersede the portions of Chapter 14-Dam Safety Performance Monitoring Program that pertain to the performance of a PFMA. It is intended to provide additional detailed guidance related to this process used for safety evaluations of dams and project works.
- B) Section 17-1 includes new definitions for "Failure" and "Credible"; and expanded definitions for "Potential Failure Mode", "Potential Failure Mode Analysis", and "Major Findings and Understandings". It also includes summaries of the values and limitations of a PFMA.
- C) Section 17-2 details the scope of a PFMA including which project features and components must be included in the evaluation, and the need to include human

and organizational factors. PFMA is the process for identifying potential failure modes.

- D) Section 17-3 identifies the circumstances when a PFMA must be conducted. This includes as part of a Part 12D safety inspection, a Quantitative Risk Assessment, prior to major modifications or remedial work on a structure, prior to or during construction, and after completion of major modifications or remedial work on a structure.
- E) Section 17-4 details the PFMA process step by step; the need for a diverse team of participants and the selection criteria; and defines the specific roles, responsibilities, experience and capabilities of the team members. Specific emphasis is placed on the importance and role of the Facilitator.
- F) Section 17-5 provides additional provisions for a PFMA including the schedule for completing documentation, and circumstances prompting an update of this living document.

#### 5) NOA Draft Chapter 18 – Level 2 Risk Analysis

##### Engineering Guidelines for the Evaluation of Hydropower Projects

###### Summary of Purpose and Major Changes:

- A) This new chapter will consolidate FERC processes and procedures for performing a Level 2 risk analysis as part of the Part 12D dam safety program. As presented in FERC's Risk-Informed Decision Making (RIDM) Risk Guidelines (2016), a Level 2 risk analysis is a "periodic risk analyses" and uses semi-quantitative approaches
- B) Section 18-1 acknowledges many other federal and international organizations use risk analyses in their dam safety programs. Risk analysis and assessment methodologies have evolved and are now key tools to identify, evaluate, and manage risk in dam safety programs. Chapter 18 adopts risk analysis as a best-practice and links directly to the semi-quantitative risk analysis (SQRA) method documented in best practices used by the Bureau of Reclamation and the Corps of Engineers (Chapter A-4, Semi-Quantitative Risk Analysis of the Best Practices for Dam and Levee Risk Analysis, 2018). Chapter 18 has some subtle and important differences including the descriptors of failure likelihood.
- C) SQRA is the process to evaluate the significance of potential failure modes from a risk perspective. This new chapter describes the process and procedures for performing a Level 2 risk analysis. References to methodologies for risk analyses are included in the Best Practices for Dam and Levee Safety Risk analysis (BOR/USACE, 2018)
- D) The outcome of a Level 2 risk analyses captures key information, provides a better understanding of the project and primary risk-drivers, prioritizes studies,

and focuses inspections and surveillance monitoring. Risk informed decision making helps the licensee “build the case” for the path forward. However, a Level 2 risk analysis is not suitable to determine if existing dam safety risks are tolerable.