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Engineering Guidelines for the Evaluation of Hydropower Projects: Chapter 17 – Potential Failure Mode Analysis

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Commissioners of the Federal Energy Regulatory Commission,

The National Hydropower Association (NHA) appreciates the opportunity to respond to the Federal Energy Regulatory Commission's (FERC) Chapter 17 – Potential Failure Mode Analysis of its Engineering Guidelines for the Evaluation of Hydropower Projects draft for public comment. The association commends the Commission for its dedication to dam and public safety. These comments, which are organized by section within the guideline, provide suggested changes, request additional clarity and outline concerns from the industry. NHA requests that FERC take into consideration each comment before moving forward with finalizing the guideline.

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I. Introduction and General NHA Comments

The National Hydropower Association (NHA) is a national non-profit trade association dedicated exclusively to advancing the interests of the U.S. hydropower industry, including conventional, pumped storage, and new marine and hydrokinetic technologies. NHA's membership consists of over 240 organizations, including consumer-owned utilities, investor-owned utilities, independent power producers, equipment manufacturers, environmental and engineering firms, and attorneys.

NHA commends FERC for exploring ways the D2SI program can be changed to further enhance the safety and stability of the nation's non-federal hydropower dams. NHA recognizes the challenge FERC has been tasked with as well as the complexity involved in creating a process that better identifies ongoing issues across an industry of highly individualized projects. The Hydropower industry recognizes that certain infrastructure within the hydro fleet is aging and may warrant additional investment. NHA believes FERC's goal of the Notice of Proposed Rulemaking (NOPR) and the guidelines are to help industry to identify where appropriate investments are needed. These comments include areas of needed clarity and suggestions for improvement to Chapter 17 – Potential Failure Mode Analysis of the Engineering Guidelines for the Evaluation of Hydropower Projects to ensure that timely submittal of documentation, risk and financial burden are considered when making changes to the D2SI program.

II. NHA Comments to Guideline Sections

a. 17-2.2 Scope of PFMA

With regard to the inclusion of all design and anticipated loading conditions through the full range of loading, NHA inquires as to whether there are a minimum set of intervals that are to be reviewed.

b. 17-2.3 Human and Organizational Factors

With regard to "organizational and professional best practices" related to general design features, NHA requests clarity as to whether their use is discretionary or they are requirements.

c. 17-3 Application

With regard to the application of a Potential Failure Mode Analysis (PFMA), NHA requests clarity as to the types of design and construction projects that will require all three PFMA sessions; the Design Modification PFMA, Construction PFMA and Post-Construction PFMA. Smaller projects may not warrant this level of evaluation and additional clarity is needed as to whether the standard will be applied uniformly.

Additionally, NHA inquires as to whether FERC must approve design and construction PFMA's prior to moving forward with a project, and if so, cautions this requirement may add significant time to the process.

With regard to the possibility that a PFMA may be required for other projects or other purposes as requested or required by the regional engineer, NHA inquires as to whether this requirement will only be applied to new projects and if current and ongoing remediation projects will be exempt from the requirement.

d. 17-4 Conducting a Potential Failure Modes Analysis

With regard to the prohibition of an owner serving as a facilitator on their own structure, NHA suggests FERC waive this requirement so long as the PFMA team consists of members outside of the owner's staff

and approval is provided by the regional engineer. NHA also inquires as to the number of PFMA team participants are to be from outside of the owner's organization. NHA also inquires as to whether a geotechnical engineer may facilitate the engineering geologist role.

With regard to input and recommendations for the screening of individual PFMs developed by the core team, NHA inquires as to the process in which an owner may challenge recommendations developed by the team.

With regard to the collection of background material, NHA requests FERC define Sudden Failure Assessment.

With regard to the identification of potential failure modes within the brainstorming session, including "failure of a turbine, pumps, gates, or similar items that prevent them from generating power or providing irrigation or municipal water supplies," NHA believes this is a significant change from current practice and will diminish the importance of dam and public safety related PFMs.

Additionally, NHA requests clarity on whether each PFMA performed during a Comprehensive Assessment (CA) starts from a blank slate with a brainstorming session.

With regard to the screening of Potential Failure Modes (PFM) within section 17-4.7.8. NHA requests clarity regarding what PFMs should be considered "insufficient information PFMs," as there are always additional studies that can be performed to better understand a PFM. NHA recommends FERC clarify whether a PFM should only be designated as "insufficient information" in circumstances where there is no information available to indicate whether it is credible or not. For example, if it is determined that an update of the IDF study is necessary for a dam, it could result in all of the PFMs associated with hydrologic loading being designated as insufficient information. Similarly, the same could be true if an updated seismic hazard assessment is needed.

e. 17-4.7.9 Disposition of Potential Failure Modes

With regard to the requirement that a licensee notify the FERC Regional Office within seven days of the identification of an urgent PFM within a PFMA session, NHA suggests FERC extend the notification window to a ten-day period.

f. 17-4.7.10 Potential Dam Safety Management Activities

With regard to sections 17-4.7.10.2 to 17-4.7.10.6 and potential dam safety management activities, NHA requests clarity regarding whether Potential Risk Reduction Measures, Inspections, Surveillance and Monitoring, the Emergency Action Plan and Follow-Up Studies should be identified for all credible, urgent and insufficient information PFMs.

g. 17-5 Potential Failure Mode Analysis Provisions

With regard to time frame for completion of documentation of a PFMA, NHA suggests FERC consider the following revisions to the schedule:

- A. prepare draft of PFMA report and submit for PFMA team review, within 60 days of the PFMA session,
- B. draft PFMA report review complete, within 90 days of the PFMA session,
- C. revised PFMA report prepared and submitted to FERC-RO, within 180 days of the PFMA session.

III. Conclusion

Once again, NHA appreciates the opportunity to comment on Chapter 17 – Potential Failure Mode Analysis of the Engineering Guidelines for the Evaluation of Projects. NHA commends FERC for exploring ways the D2SI program can be changed to further enhance the safety and stability of the nation’s non-federal hydropower dams. We hope FERC considers the areas of agreement, identified challenges and alternatives presented within our response to the guideline.

NHA appreciates the opportunity to provide these comments and discuss this important public safety topic.