DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

18 CFR Part 12

[Docket No. RM20–9–000; Order No. 880]

Safety of Water Power Projects and Project Works

AGENCY: Federal Energy Regulatory Commission.

ACTION: Final rule.

SUMMARY: In this final rule, the Federal Energy Regulatory Commission (Commission) is amending its regulations governing the safety of hydroelectric projects licensed by the Commission under the Federal Power Act. These regulations will promote the safe operation, effective maintenance, and efficient repair of licensed hydroelectric projects and project works to ensure the protection of life, health, and property in surrounding communities. Specifically, the Commission is revising its regulations to: incorporate two tiers of project safety inspections by independent consultants, codify existing guidance requiring certain licensees to develop an owner's dam safety program and a public safety plan, update existing regulations related to public safety incident reporting, and make various minor revisions.

DATES: The rule is effective April 11, 2022.

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Order No. 880

Final Rule

(Issued December 16, 2021)

1. The Federal Energy Regulatory Commission (Commission or FERC), under Part I of the Federal Power Act (FPA), licenses hydroelectric projects that are developed by non-Federal entities including individuals, private entities, Indian Tribes, states, municipalities, electric cooperatives, and others. Under section 10(c) of the FPA, the licensee of any hydroelectric project under the jurisdiction of the Commission must conform to ''such rules and regulations as the Commission may from time to time prescribe for the protection of life, health, and property.'' [1]

2. Since early 2017, the Commission has solicited, received, and reviewed expert opinions on the structure and implementation of the Commission's dam safety program, particularly the provisions for independent consultants' safety inspections required under part 12, subpart D of the Commission's regulations.[2] These independent consultant safety inspections, commonly referred to as part 12 inspections, are facilitated by licensees and are in addition to the dam safety inspections conducted by Commission staff.

3. To address expert recommendations on the part 12 inspection process, and to codify guidance issued by the Commission's Office of Energy Projects, Division of Dam Safety and Inspections (D2SI) over the past several years, the Commission is revising its dam safety regulations found in Title 18, part 12 of the Code of Federal Regulations. In this final rule, the Commission is revising part 12 by replacing subpart D in its entirety, adding new subpart F, and making minor revisions to subparts A, B, C, and E, as further described below.

I. Background

4. Section 10(c) of the FPA requires licensees, in pertinent part, to ''maintain the project works in a condition of repair adequate . . . for the efficient operation of said works in the development and transmission of power,'' to ''make all necessary renewals and replacements,'' and to ''conform to such rules and regulations as the Commission may from time to time prescribe for the protection of life, health, and property.'' [3]

5. Pursuant to FPA section 10(c), on December 27, 1965, the Commission's predecessor agency, the Federal Power Commission (FPC), in Order No. 315, promulgated regulations that require licensees to provide complete safety inspections of licensed water power project works by independent consultants at five-year intervals, or more frequently if necessary.[4] Order No. 315 was intended to supplement D2SI staff's inspections of project works with detailed periodic inspections overseen by an independent consultant.[5]

6. On January 21, 1981, the Commission issued Order No. 122 to consolidate the Commission's orders, regulations, and practices relating to

[1] 16 U.S.C. 803(c).

[2] 18 CFR pt. 12 (2021).

[3] 16 U.S.C. 803(c).

[4] *Hydroelectric Licensed Projects—Inspections to Insure Safe Operation,* Order No. 315, 34 FPC 1551 (1965).

[5] *Id.*

project safety under part 12 of the Commission's rules and to revise the existing project safety inspection regulations.[6] The Commission's rules related to independent consultant safety inspections have not been substantially revised or amended since 1981.

7. To ensure that the Commission's dam safety program remains current with the evolving nature of the dam safety field, D2SI staff issues, and periodically updates, *Engineering Guidelines for the Evaluation of Hydropower Projects* (Engineering Guidelines).[7] D2SI staff has also augmented the part 12 inspection process over the years by adding additional inspection components (*e.g.,* the Potential Failure Mode Analysis, the Supporting Technical Information Document, and the Dam Safety Surveillance and Monitoring Program and Report).

8. In June 2002, D2SI began a licensee pilot program for conducting a Potential Failure Mode Analysis [8] as a component of a part 12 inspection and issued for comment a draft Chapter 14 of the Engineering Guidelines, which would guide licensees in performing this type of dam safety analysis. In April 2003, D2SI issued a final Chapter 14 of the Engineering Guidelines and required a Potential Failure Mode Analysis to be performed during all part 12 inspections. Consistent with this requirement, licensees have conducted over a thousand Potential Failure Mode Analyses. The Commission is codifying the Potential Failure Mode Analysis as part of the scope of a part 12 inspection, specifically during a comprehensive assessment and typically at a 10-year interval.

9. On December 14, 2005, the upper reservoir of the Taum Sauk Hydroelectric Project No. 2277, a pumped storage project, was overtopped during the final pumping cycle, causing a breach of the upper reservoir which released over 1 billion gallons of water, resulting in personal injury and significant environmental and property damage.[9] Following the December 2005 failure of Taum Sauk Dam, D2SI began requiring licensees to develop and maintain an Owner's Dam Safety Program, with the goal of ensuring that licensees have a robust and focused dam safety program to protect public safety, the environment, and project facilities. In August 2012, D2SI staff required all owners of high and significant hazard potential dams [10] to submit an Owner's Dam Safety Program.[11] The Commission is codifying this requirement by adding a new subpart F to the Commission's part 12 regulations.

10. On February 7, 2017, high flows in the Feather River basin caused the water level in the Feather River Hydroelectric Project No. 2100 reservoir to rise at Oroville Dam and, for the first time in project history, flow down the emergency spillway, resulting in extensive erosion and damage to Oroville Dam's main spillway and emergency spillway area.[12] This event precipitated the evacuation of nearly 188,000 residents from the town of Oroville and from other downstream communities north of Sacramento, California. Following the February 2017 Oroville Dam spillway incident, the Commission required the project licensee, California Department of Water Resources (California DWR), to convene a team of independent, third-party consultants to complete a forensic analysis to determine the cause of the incident.[13] The Oroville Independent Forensic Team Report documented the team's findings, conclusions, and recommendations.[14] Several of the Oroville Independent Forensic Team's observations related to potential areas for improvement in the Commission's dam safety program, particularly the part 12 inspection process.

11. Separately, the Commission convened a FERC After Action Panel to review and evaluate the Commission's dam safety program in the months following the Oroville Dam spillway incident. The D2SI Director's mandate to the FERC After Action Panel was to: ''review project documents and history for Oroville Dam . . . .;'' ''review the performance of the FERC dam safety program at the Oroville Dam Project, which includes both work and actions by FERC staff, and the program requirements on the dam owner, such as the [p]art 12 process, the [Potential Failure Mode Analyses] process, the Instrumentation and Monitoring Program, and Owners Dam Safety Program . . . .;'' ''make conclusions regarding any shortcomings in the FERC dam safety program implementation at Oroville Dam;'' and if shortcomings are identified, recommend ''improvement or changes to the FERC dam safety program to ensure that future incidents like Oroville can be avoided.'' [15]

12. The FERC After Action Panel Report documented several shortcomings of the Commission's dam safety program with respect to its implementation at the Oroville Dam Project, and recommended several improvements to the part 12 inspection process that could increase the likelihood that design and operational deficiencies are detected in advance of a major incident.

13. In light of the Oroville Independent Forensic Team Report and the FERC After Action Panel Report findings, the desire to codify existing dam safety guidance, and the Commission's authority under FPA section 10(c) to promulgate rules protecting life, health, and property, the Commission is revising its part 12 dam safety regulations, as discussed further below.[16]

[6] *Water Power Projects and Project Works Safety,* Order No. 122, 46 FR 9029 (Jan. 28, 1981), FERC Stats. & Regs. ¶ 30,225 (1981) (cross-referenced at 14 FERC ¶ 61,041).

[7] D2SI's Engineering Guidelines are available on the Commission's website at *https://www.ferc.gov/industries-data/hydropower/dam-safety-and-inspections/eng-guidelines.*

[8] A Potential Failure Mode Analysis is a method to evaluate the various ways a dam and its components could possibly fail. Generally, this involves identifying possible failure scenarios and evaluating those factors that could make the failure mode scenario more or less likely to occur. Next, the significance of each potential failure mode is determined and a prioritized plan is developed to address the most significant potential failure modes.

[9] More information about the Taum Sauk Dam Breach Incident can be found on the Commission's website at *https://www.ferc.gov/industries-data/hydropower/dam-safety-and-inspections/taum-sauk-pumped-storage-project-p-2277-dam.*

[10] Hazard potential is a classification based on the potential consequences in the event of failure or misoperation of the dam, canal, or water conveyance, and is subdivided into categories (*e.g.,* Low, Significant, High). High hazard potential generally indicates that failure or misoperation of the project work will probably cause loss of human life. Significant hazard potential and low hazard potential generally indicate that failure or misoperation will probably not cause loss of human life but may have some amount of economic, environmental, or other consequences. Hazard classifications are based solely on the consequences of dam failure and do not in any way reflect the condition of the rated dams.

[11] *See* Commission staff's August 15, 2012 letter to owners of high and significant hazard potential dams, *https://www.ferc.gov/sites/default/files/2020-04/letter-submit-odsp.pdf.*

[12] More information about the Oroville Dam spillway incident can be found on the Commission's website at *https://cms.ferc.gov/industries-data/hydropower/dam-safety-and-inspections/oroville-dam-service-spillway-p-2100.*

[13] *See* Commission staff's letter to California DWR regarding the emergency repair and board of consultants for Oroville Dam spillway, Project No. 2100 (Feb. 13, 2017), *https://cms.ferc.gov/sites/default/files/2020-04/Orovilledam.pdf.*

[14] Independent Forensic Team Report, Oroville Dam Spillway Incident (Jan. 5, 2018), *https://damsafety.org/content/oroville-independent-forensic-team-releases-final-investigative-report.*

[15] *See* FERC After Action Panel Assessment of Oroville Spillway Incident Causes and Recommendations to Improve Effectiveness of the FERC Dam Safety Program (Nov. 23, 2018), *https://www.ferc.gov/sites/default/files/2020-04/reportdamsafety.pdf.*

[16] The May 2020 failures of the Edenville and Sanford Dams in Michigan have resulted in substantial hardship and economic damage. A forensic investigation is being undertaken to understand the root causes of those failures. The NOPR was substantially complete prior to the

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II. Notice of Proposed Rulemaking

14. On July 16, 2020, the Commission issued a Notice of Proposed Rulemaking proposing to revise its part 12 regulations to incorporate two tiers of independent consultant safety inspections, codify existing guidance on developing owner's dam safety programs and public safety plans, modify public safety incident reporting requirements, and make various minor revisions throughout part 12.[17] The Commission received 16 comment letters in response to the NOPR.[18] Comments were submitted by licensees and individuals, some as part of submissions from trade associations, including the National Hydropower Association (NHA) and the Dam Safety Interest Group of CEATI International (CEATI).[19] The Commission has considered all comments in formulating the final rule.

III. Engineering Guidelines

15. The Commission is also in the process of updating its Engineering Guidelines by adding new Chapters 15 through 18. On July 16, 2020, concurrently with issuance of the NOPR, the Commission solicited public review and comment by issuing the new guidelines in draft format in four separate advisory dockets accessible on the Commission's eLibrary website. Chapter 15, in Docket No. AD20–20–000, provides licensee guidance for developing and maintaining a Supporting Technical Information Document.[20] Chapter 16, in Docket No. AD20–21–000, provides licensee guidance on the scope of the part 12D independent consultant inspection program. Chapter 17, in Docket No. AD20–22–000, provides licensee guidance for conducting a Potential Failure Mode Analysis. Chapter 18, in Docket No. AD20–23–000, provides licensee guidance for conducting a Level 2 Risk Analysis. Entities that filed comments on the draft chapters included: Licensees, consultants, and other individuals through trade and other professional societies including the United States Society on Dams, NHA, and CEATI. The U.S. Army Corps of Engineers (Corps) also submitted comments. The Commission has considered all comments in finalizing Chapters 15 through 18 of the Engineering Guidelines. The final versions of these chapters are available on the FERC Division of Dam Safety and Inspections website.[21]

IV. Discussion

16. As explained in the NOPR, the Commission evaluated potential revisions to its part 12 regulations by considering the findings of the Oroville Independent Forensic Team and FERC After Action Panel; reviewing the inspection practices of other Federal agencies responsible for ensuring the safety of a large number of dams, including those of the Bureau of Reclamation (Reclamation) [22] and the Corps; [23] and reviewing the Federal Emergency Management Agency's (FEMA) *Federal Guidelines for Dam Safety*.[24]

17. In addition to making various minor revisions and updates to our part 12 regulations, this final rule accomplishes four overarching objectives that are integral to strengthening the Commission's dam safety program and addressing shortcomings identified by the forensic investigations that followed the Oroville Dam spillway incident. First, the final rule implements two tiers of part 12 independent consultant safety inspections, in addition to Commission staff's regular inspections. The two-tier structure includes two types of inspections: a comprehensive assessment and a periodic inspection. Each type of inspection will be performed at a 10-year interval, with the periodic inspection occurring midway between comprehensive assessments. The two-tier inspection structure retains the current five-year interval between part 12 inspections and mirrors FEMA's recommendation that formal inspections be conducted at intervals not to exceed five years.[25] The alternating two-tier structure is similar to those used by Reclamation and the Corps. Because the existing five-year interval between part 12 inspections remains the same, the revised regulations do not increase the likelihood that undiscovered safety issues will persist for longer periods of time. The comprehensive assessment requires a more in-depth review than the current part 12 inspection, formally incorporates the existing Potential Failure Mode Analysis process, and requires a semi-quantitative risk analysis, as recommended by the Oroville Independent Forensic Team and FERC After Action Panel. The periodic inspection is narrower in scope than the current part 12 inspection and focuses primarily on the performance of project works between comprehensive assessments.

18. Second, the final rule changes the process by which D2SI reviews and evaluates the qualifications of independent consultants that conduct part 12 inspections. Currently, § 12.34 of the Commission's regulations requires the licensee to submit to the Director of D2SI for approval a resume describing the independent consultant's experience.[26] FEMA recommends that ''the inspection team should be chosen on a site-specific basis considering the nature and type of dam . . . [and] should comprise individuals having appropriate specialized knowledge in structural, mechanical, electrical, hydraulic, and embankment design; geology; concrete materials; and construction procedures.'' [27]

19. Accordingly, the process adopted in the final rule requires licensees to submit to the Director of D2SI an independent consultant team proposal,

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Michigan dam failures and was not intended to address any findings or recommendations that may result from the forensic investigation. The Commission will review the findings once the investigation is complete.

[17] *Safety of Water Power Projects and Project Works,* 85 FR 45,032 (July 24, 2020), 172 FERC ¶ 61,061 (2020) (NOPR).

[18] The following entities filed comments on the NOPR: Central Nebraska Public Power and Irrigation District; Wisconsin Power and Light Company; Alaska Electric Light and Power Company; Copper Valley Electric Association; City of North Little Rock Electric; Alaska Power Association; National Hydropower Association; United States Society on Dams; CEATI International, Dam Safety Interest Group; American Association for Laboratory Accreditation; Hydropower Reform Coalition; Sierra Club; Michigan Department of Environment, Great Lakes, and Energy; Schnabel Engineering, Inc.; David L. Mathews; and U.S. Senator Lisa Murkowski. Some of these comments, such as those filed by American Association for Laboratory Accreditation, Hydropower Reform Coalition, and Sierra Club, raise issues that are outside the scope of this rulemaking proceeding and are not addressed further in this final rule.

[19] NHA and NextEra Energy Resources, LLC, each filed motions to intervene in Docket No. RM20–9–000. Intervention is not necessary in order to request rehearing of a rulemaking. *See, e.g., Limiting Authorizations to Proceed with Construction Activities Pending Rehearing,* Order No. 871–B, 86 FR 26150 (May 13, 2021), 175 FERC ¶ 61,098, at n.14 (2021). Accordingly, these motions are unnecessary.

[20] As explained in Chapter 15 of the Engineering Guidelines, the Supporting Technical Information Document is a ''living'' document that serves as a compendium of existing project information, including information about a project's design, construction history, operating procedures, and engineering analyses.

[21] Available at *https://www.ferc.gov/industries-data/hydropower/dam-safety-and-inspections/eng-guidelines.*

[22] Reclamation, *Review/Examination Program for High and Significant Hazard Dams* (Sept. 2018), *https://www.usbr.gov/recman/fac/fac01-07.pdf.*

[23] Corps, *Safety of Dams—Policy and Procedures* (Mar. 2014), *https://www.publications.usace.army.mil/Portals/76/Publications/EngineerRegulations/ER_1110-2-1156.pdf.*

[24] FEMA, *Federal Guidelines for Dam Safety* (Apr. 2004), *https://www.fema.gov/sites/default/files/2020-08/fema_dam-safety_P-93.pdf* (FEMA Dam Safety Guidelines).

[25] *Id.* at 42.

[26] 18 CFR 12.34.

[27] FEMA Dam Safety Guidelines at 42.

comprising one or more independent consultants and additional engineering or scientific personnel, as needed, which must demonstrate that the members of that team possess an appropriate level of expertise for the specific project under consideration. This change reflects the reality that, for many of the projects under the Commission's jurisdiction, a single independent consultant will not possess the appropriate degree and diversity of technical proficiency necessary to evaluate all aspects of the project. The current requirement that an independent consultant be a licensed professional engineer with a minimum of 10 years' experience in ''dam design and construction and in the investigation of the safety of existing dams'' is retained, but will apply only to the designated independent consultants, and not to other supporting members of the independent consultant team.[28]

20. Third, the final rule codifies existing guidance related to the Owner's Dam Safety Program. Currently, the Commission's part 12 regulations do not explicitly require a licensee to develop an Owner's Dam Safety Program. However, § 12.4 of our existing regulations provides that the Commission may require an applicant or licensee to submit reports or information on any condition affecting the safety of the project.[29] Since the initial request for an Owner's Dam Safety Program in August 2012,[30] approximately 250 have been developed by licensees and submitted to the Commission. This final rule codifies the requirement that licensees of one or more high or significant hazard potential dams [31] must prepare, maintain, file with the Commission, and periodically review and update an Owner's Dam Safety Program. Licensees must designate a person responsible for overseeing day-to-day implementation of the dam safety program.

21. Fourth, the final rule modifies licensee reporting and preparedness requirements related to public safety at or near hydroelectric projects. Currently, licensees are required to install and maintain public safety devices and to report deaths or serious injuries at their projects.[32] The final rule revises the definition of a ''project-related'' incident to clarify that licensees are required to report those public safety incidents that are related to project operation; to report rescues in addition to deaths and serious injuries; and to prepare, maintain, and submit a public safety plan to D2SI, which is the current practice required by existing D2SI guidance.

22. A section-by-section analysis, describing the proposal set forth in the NOPR, the comments received on the NOPR, and the Commission's determinations, follows.

A. Review, Inspection, and Assessment by Independent Consultants

23. In response to the findings and recommendations in the Oroville Independent Forensic Team Report and FERC After Action Panel Report, the Commission is revising its regulations under 18 CFR part 12, subpart D, to enhance the program for independent consultant inspections. The regulations adopted here will replace existing subpart D in its entirety. Due to the final rule's implementation of two tiers of part 12 inspections (periodic inspections and comprehensive assessments), subpart D will now include §§ 12.30 through 12.42, which results in changes to the numbering of subpart E (existing §§ 12.40 through 12.44 will become §§ 12.50 through 12.54).

1. Section 12.30—Applicability

24. Section 12.30 establishes the applicability of subpart D's independent consultant inspection requirement and identifies three conditions that result in a project being subject to the provisions of subpart D. Subpart D currently applies to any project development that has a dam: (1) Greater than a specified height; (2) with an impoundment exceeding a specific gross storage capacity; or (3) that has a high hazard potential and is determined by the Regional Engineer to require inspection by an independent consultant. Although the subpart D regulations could be interpreted as only applying to dams, D2SI has in practice applied the requirements of this subpart to those portions of canals and penstocks judged to have a high hazard potential and this rule adopts that interpretation.

25. The NOPR proposed revisions to § 12.30 to align subpart D's applicability with existing D2SI practices and to make clear that the provisions of subpart D apply to project works other than dams and could apply to projects that do not have a dam. Specifically, the Commission proposed revisions to § 12.30 to clarify that while the existing height and storage thresholds apply only to project developments with a dam, the high hazard potential criterion applies to all project works (*i.e.,* if any portion of a project work has a high hazard potential, the project development would be subject to subpart D). Additionally, as revised, subpart D would apply to a project development if the Regional Engineer or other Commission representative determines that an inspection is required for reasons not listed. For example, the Regional Engineer may conclude that an independent consultant inspection is warranted for a project that is otherwise not subject to subpart D where the dam or other project work poses significant safety concerns.

26. Certain commenters suggested that further distinction should be made to distinguish the requirements for low hazard potential works and high hazard potential works within a licensed project development that is subject to part 12.[33] NHA also suggested that recreational access to project lands should be excluded from the consideration of the hazard potential or that the applicability of this revision should be narrowed.[34] CEATI asked for clarity regarding who is considered an ''other authorized Commission representative'' as that term is used in § 12.30(c).[35]

27. All project works function as a system. Even low hazard potential project works have the potential to adversely impact high hazard potential works; therefore, as has been D2SI's current practice, low hazard potential works of projects meeting the applicability provisions of § 12.30 must also meet the requirements of subpart D. This is not a change from the interpretation of the existing regulations, but rather a clarification. Regarding the second comment, as is current practice in evaluating downstream hazard potential, high usage areas of any type, including recreational areas, should be considered in determining hazard potential.[36] Last, § 12.30(c)'s use of the term ''other authorized Commission representative'' is consistent with § 12.3(b)(3), which defines ''authorized Commission representative'' as the Director of the Office of Energy Projects, the Director of D2SI, the Regional Engineer, or any

[28] 18 CFR 12.31(a).

[29] 18 CFR 12.4(b)(2)(ii)(B).

[30] *See supra* P 9.

[31] *See supra* note 10 (defining high hazard and significant hazard potentials).

[32] *See* 18 CFR 12.10(b) (death or serious injury reporting) and 12.42 (warning and safety devices).

[33] *See, e.g.,* CEATI's September 9, 2021 Comments at 5 (CEATI Comments); NHA's September 22, 2021 Comments at 4 (NHA Comments).

[34] *See* NHA Comments at 4.

[35] CEATI Comments at 5.

[36] *See* FEMA Dam Safety Guidelines *supra* note 24. Consistent with FEMA guidance, high usage areas of any type should be considered appropriately in evaluating hazard potential and it has been D2SI's practice to consider the implications of recreation use on hazard potential.

other member of the Commission staff whom the Commission may specifically designate. Apart from updating cross references within part 12 and a minor clarifying edit, no substantive revisions were made to this section following the NOPR.

2. Section 12.31—Definitions

28. Current § 12.31 defines ''independent consultant,'' ''high hazard potential,'' ''height above streambed,'' and ''gross storage capacity'' for the purposes of the provisions of subpart D. Section 12.31 also provides the D2SI Director the authority to grant a waiver from the 10-year experience requirement in the definition of independent consultant.

29. The NOPR proposed revisions to § 12.31 to update the definition of an ''independent consultant'' and to add definitions for the terms ''independent consultant team,'' ''periodic inspection,'' and ''comprehensive assessment.''

30. Our regulations currently define ''independent consultant'' as a licensed professional engineer, with at least ten years of experience and expertise related to dams, who is not, and has not been within two years, an employee of the licensee or its affiliates or an agent acting on behalf of the licensee. As proposed in the NOPR, the revised definition of ''independent consultant'' would retain the licensure and 10-year experience requirements. However, the restrictions regarding the professional relationship between the independent consultant and licensee would be separated into three separate elements, requiring that an independent consultant: (1) Is not an employee of the licensee or its affiliates; (2) has not been an employee of the licensee or its affiliates within two years prior to performing a periodic inspection or comprehensive assessment; and (3) has not been an agent acting on behalf of the licensee or its affiliates before performing services under this part.[37] The NOPR explained that the Commission intends to narrowly apply this restriction, with a primary goal of ensuring that independent consultants are not responsible for reviewing work to which they contributed substantially.

31. The NOPR also proposed to define ''independent consultant team'' as comprising one or more independent consultants and additional engineering and scientific personnel, as needed. Collectively, the independent consultant team must 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). As the NOPR explained, this approach ensures that each inspection and review is conducted by qualified personnel such that the Commission can reasonably expect that potential issues relating to project safety or stability will be identified. The Commission intends to place greater emphasis on the qualifications of the personnel on an independent consultant team, and their collective experience and expertise, for comprehensive assessments compared to periodic inspections; projects with higher consequences or total project risk; projects with a greater number of, or more technically diverse or challenging, project works; and projects with a history of unusual or adverse performance. Currently, § 12.34 requires licensees to submit resumes for independent consultants for Commission approval. As further discussed below, the final rule revises § 12.34 to require licensees to submit an independent consultant team proposal for the Director of D2SI's approval.

32. Commenters requested clarification of the definition of an independent consultant team and asked that the 10-year experience requirement be limited to just the independent consultant and not the entire team.[38] Some commenters expressed general concern about the relatively limited pool of qualified independent consultants,[39] and that the provisions on independence might disqualify those who have performed prior work on the project.[40] CEATI recommended that the reference to qualified dam design and construction personnel should be broadened to include other critical project works such as penstocks, gates, and other structures.[41]

33. Based on the comments received, we revised the definition of independent consultant team to clarify that the ten-year experience requirement applies only to the independent consultant and does *not* apply to the additional independent consultant team members. The final rule requires that an independent consultant team must include at least one independent consultant, as defined in paragraph (a) of this section, and that supporting team members must meet the requirements of paragraphs (a)(3) through (a)(5) of this section regarding the professional relationship between the team member and the licensee. In addition, former paragraph (i) regarding the granting of a waiver of the 10-year requirement was relocated to § 12.34 for clarity.

34. In response to the general concerns about the limited pool of qualified independent consultants or team members, the restrictions listed in paragraphs (a)(3) through (a)(5) are designed to ensure that independent consultants and team members are not responsible for reviewing work to which they substantially contributed. This limiting provision is essential in ensuring independence of the independent consultant and independent consultant teams.[42] Examples of what constitutes independence is provided in Chapter 16 of the Engineering Guidelines.[43] This provision clarifies previous guidance and practice and in staff's opinion will not reduce the pool of independent consultants performing this work. On the contrary, the inclusion of independent consultant team members provides more opportunity to develop the experience of more junior professionals to be qualified as future independent consultants. ''Appurtenances'' has been added to the required expertise of the independent

[37] Because the circumstances will vary and require evaluation by Commission staff on a case-by-case basis, the definition proposed in the NOPR and adopted in this final rule does not attempt to set specific thresholds for scope or duration of services. Chapter 16 of the guidelines provides examples of the type of information Commission staff will consider when making these determinations.

[38] *See, e.g.,* NHA Comments at 4; CEATI Comments at 6; Central Nebraska Public Power and Irrigation District's September 22, 2020 Comments at 1–2 (Central Nebraska Comments).

[39] *See, e.g.,* NHA Comments at 4; CEATI Comments at 6; Central Nebraska Comments at 1–2; Wisconsin Power and Light Company's September 18, 2020 Comments at 5–7 (Wisconsin Power Comments).

[40] *See, e.g.,* NHA Comments at 4; CEATI Comments at 6; Wisconsin Power Comments at 6.

[41] *See* CEATI Comments at 7.

[42] CEATI asks whether a licensee may appeal a determination under § 12.31(a)(5) of a possible conflict of interest based on an independent consultant's prior work on a project. CEATI Comments at 6. As explained in Chapter 16 of the Engineering Guidelines, if there is a situation that could disqualify an independent consultant or team member under § 12.31(a)(5), it is the licensee's responsibility to demonstrate in the inspection plan that any potential conflict of interest will be avoided. In any event, any staff action is subject to a request for rehearing, see 18 CFR 385.1902(a), although it is unclear to what extent we would entertain such an interlocutory matter.

[43] With respect to the limitation in § 12.31(a)(5) that an independent consultant has not been ''an agent acting on behalf of the licensee or its affiliates,'' we do not find it necessary to define the term ''agent'' as some commenters suggest. *See* NHA Comments at 5; CEATI Comments at 6. The term agent is commonly used to refer to a person with authority to act on another's behalf. As we have explained, the purpose of the limitation is to ensure the independent consultant's independence. Chapter 16 of the Engineering Guidelines provides example scenarios and guidance to help licensees navigate the independent consultant approval process.

consultant team to broaden the experience of the team beyond that of just the dam.

35. The NOPR proposed and the final rule updates the definition of ''hazard potential'' to ensure consistency with FEMA's Hazard Potential Classification System for Dams,[44] and relocates the definition of ''high hazard potential'' to § 12.3(b)(13)(i).[45] The updated definition applies to dams, canals, and other water conveyances, or any portion thereof. The final rule further defines ''significant hazard potential'' and ''low hazard potential classifications'' in §§ 12.3(b)(ii) and (iii).

36. The NOPR also proposed and the final rule in § 12.31 includes definitions for ''periodic inspection'' and ''comprehensive assessment.'' No further revisions were made to this section following the NOPR.

3. Section 12.32—General Inspection Requirement

37. Existing § 12.32 requires that an independent consultant perform a periodic inspection of the project works of each development,[46] subject to the provisions of subpart D.

38. The NOPR proposed to retain the general requirement that an independent consultant inspection be performed, to revise § 12.32 to incorporate the terms ''periodic inspection'' and ''comprehensive assessment,'' and to require the filing of a report following each type of inspection. The NOPR also proposed to relocate the general requirement to file an inspection report from existing § 12.37 to revised § 12.32.

39. Commenters requested that ''generating equipment'' be added to the list of project works excluded from inspections and further clarity be provided to distinguish between the inspection requirements for high hazard potential and low hazard potential project works.[47] Generating equipment is a critical element in the passage and discharge of water through a powerhouse. Because the failure of generating equipment to pass discharge can result in operational and life safety concerns, it is imperative that generating equipment be inspected for mechanical reliability and operational concerns. Therefore, we decline to revise § 12.32 to add generating equipment to the list of project works excluded from inspections. The subject of inspection requirements for high and low hazard potential project works is discussed in § 12.30 above. No revisions to the section were made based on this comment. The final rule eliminates two general references to the Engineering Guidelines from this section and adds a sentence to clarify that the licensee must ensure that the independent consultant team's report complies with all the requirements set forth in subpart D.

4. Section 12.33—Exemption

40. Existing § 12.33 grants the Director of D2SI the authority to exempt projects from the provisions of subpart D for good cause and provides an example of what may constitute good cause. At the Director of D2SI's discretion, the exemption may be granted in perpetuity or may require periodic reevaluation of the exemption justification (*e.g.,* by reviewing and confirming that the project has a low hazard potential).

41. The NOPR, which in § 12.33(a) retained the Director of D2SI's authority to exempt projects from subpart D, proposed revisions to § 12.33(b) to update the example of good cause to include canals and other water conveyances. In addition, the NOPR proposed in § 12.33(c) to rescind any exemption from subpart D that was issued prior to the effective date of this rule. Existing subpart D exemptions have been granted over several decades and, as the state of the practice of dam safety has evolved, have not been reconsidered consistently. For this reason, the NOPR contemplated that an entity desiring a continued exemption would be required to reapply to ensure that any justification for a subpart D exemption is reviewed based on the current state of the practice, considering potential failure modes, consequences, and total project risk.

42. NHA requested that the Commission reconsider rescinding all previously approved exemptions from the requirements of subpart D.[48]

43. Based on the comments received and after further consideration, the blanket rescission of all previously approved exemptions has been removed from the regulations. Instead, we have revised § 12.33 to clarify that the Director of D2SI, for good cause shown, may rescind a previously approved exemption from the requirements of subpart D. This determination will be made on a case-by-case basis. In addition, for future exemption requests, the Director of D2SI may require the licensee to complete a comprehensive assessment prior to considering the exemption request.

5. Section 12.34—Approval of Independent Consultant Team

44. Prior to performing an inspection, existing § 12.34 requires a licensee to submit for the Director of the Office of Energy Projects' approval a detailed resume for an independent consultant. In the NOPR, the Commission proposed several revisions to § 12.34 to address concerns raised in the Oroville Independent Forensic Team report, the FERC After Action Panel Report, and issues related to implementation of the existing rule over the past several years.[49]

45. In § 12.34(a), the NOPR proposed to require licensees to obtain written approval of the independent consultant team, from the Director of D2SI instead of the Director of the Office of Energy Projects, prior to performing a periodic inspection or comprehensive assessment. While in practice D2SI has granted approval of independent consultants prior to inspections, the regulation as currently written does not stipulate that D2SI approval must be obtained.

46. As proposed in the NOPR, § 12.34(b) would require licensees to submit a detailed independent consultant team proposal to the Director of D2SI at least 180 days prior to performing a periodic inspection or comprehensive assessment. This involves two primary changes. As we explained in the NOPR, while the current text of § 12.34(b) requires licensees to submit an independent consultant's detailed resume 60 days in advance, increasing the submittal time to 180 days in advance does not represent a change in practice. D2SI staff routinely issues reminder letters to licensees approximately 18 months in advance of any inspection required under subpart D, and for several years has requested that independent consultants' resumes be submitted six months in advance to ensure that all parties are aware of their roles and responsibilities, and have sufficient time to prepare for the inspection. The

[44] *See* FEMA, *Federal Guidelines for Dam Safety: Hazard Potential Classification System for Dams* (Apr. 2004), *https://www.ferc.gov/sites/default/files/2020-04/fema-333.pdf* (FEMA Hazard Potential Classification System).

[45] *See infra* P 123.

[46] Development means that part of a project comprising an impoundment and its associated dams, forebays, water conveyance facilities, power plants, and other appurtenant facilities. A project may comprise one or more developments. 18 CFR 12.3(b)(7).

[47] *See* NHA Comments at 5–6.

[48] NHA Comments at 6.

[49] In particular, the improvements to the independent consultant team approval process include: broadening the composition of independent consultant team members to include representation from varied technical disciplines; ensuring thorough review of project works by qualified individuals with the appropriate technical disciplines; and performing comprehensive reviews of the original project design, construction, and subsequent performance.

final rule codifies D2SI's current practice.

47. Second, existing § 12.34 requires that resumes be submitted only for any independent consultant, to demonstrate that they meet the requirements provided in § 12.31. In the NOPR, we proposed revisions to § 12.34(b) directing licensees to submit documentation of the experience and qualifications for all members of the independent consultant team, including one or more independent consultants and additional contributing members, as needed. This change will allow Commission staff to more fully evaluate the independent consultant team's experience and ensure it is commensurate to the scale, complexity, and technical disciplines of the project and type of review being performed. The Commission intends to require a higher level of experience and expertise for a comprehensive assessment than a periodic inspection, due to the broader scope of the comprehensive assessment.

48. The NOPR proposed changes to § 12.34(c) that would permit the Director of D2SI to disapprove of an independent consultant team member, regardless of demonstrated experience and qualifications, for good cause, such as having a report rejected by the Commission within the preceding five years. This provision allows the Commission to ensure that independent consultants' inspections are performed by qualified parties.

49. In response to the NOPR, commenters requested further clarity on: (1) The independent consultant team proposal information that should be provided in the inspection plan; (2) grounds for disapproval of an independent consultant; and (3) the timing for submitting the inspection plan.[50]

50. Based on comments received, the final rule further revises § 12.34 to:

- Clarify that the independent consultant team proposal must identify the technical disciplines and level of expertise required to perform the inspection and show that each member of the independent consultant team who is not designated as an independent consultant meets the requirements of § 12.31(a)(3) through (5);
- clarify that the D2SI Director may disapprove an individual who is identified as the independent consultant in the independent consultant team proposal, and that grounds for disapproval may include rejection by the Commission of one or more reports on an inspection under this subpart within the preceding five years;
- clarify that the 180-day timing is measured from the scheduled date of the field inspection or other designated activity such as a Potential Failure Mode Analysis or risk analysis;
- add a requirement that the independent consultant team proposal clearly delineate team members' roles and responsibilities to ensure no team member will be responsible for reviewing and evaluating their own previous work on the project;
- add a requirement that if required information about any supporting team member is not available at the time of the independent consultant team proposal, the missing information must be included in the preliminary report required by § 12.42;
- clarify that written approval of the facilitator(s) of the Potential Failure Mode Analysis or risk analysis must also be obtained; and
- relocate information on granting of a waiver of the 10-year requirement from § 12.32 to § 12.34 for clarity.

6. Section 12.35—Periodic Inspection

51. Existing § 12.35 establishes the scope of the independent consultant's inspection. In the NOPR, the Commission proposed to revise § 12.35 in its entirety such that it establishes the scope of a periodic inspection, the less intensive of the two tiers of part 12 inspections.

52. The final rule adopts this change. As revised, § 12.35 establishes the scope of a periodic inspection, which includes review of prior reports, a field inspection, review of the surveillance and monitoring plan and data, and review of dam and public safety programs. A periodic inspection has a reduced scope compared to the existing independent consultant's inspection.

53. In response to the NOPR, commenters recommended: broadening the scope of the periodic inspection to include a review of the Supporting Technical Information Document;[51] adding a review of security protocols of the operating system to the inspection;[52] eliminating the requirement that the independent consultant team must have a full understanding of all the project works;[53] and deleting the requirement for the team to inspect all accessible project works with no consideration for the risk/hazard potential of the project work.[54]

54. Adding a review of the Supporting Technical Information Document would provide little benefit to the periodic inspection and would result in increased burden and cost. Adding a review of the security protocols is outside the scope of a periodic inspection and would be best handled separately by others with specialized experience. For these reasons, neither recommendation was incorporated into the scope of a periodic inspection.

55. Eliminating the requirement for the independent consultant team to have a full understanding of the project works would negate the team's ability to adequately understand the technical and operational aspects of the project and therefore be unable to provide meaningful observations, conclusions, and recommendations from the inspection. Limiting the inspection to only those project works that are considered high risk or high hazard would be subjective, could overlook project works whose potential hazard or risk could change over time, and would result in an incomplete inspection and assessment of the project works. The final rule adds a sentence to § 12.35(a) to clarify that it is the licensee's responsibility to provide to the independent consultant team all information and reports necessary to fulfill the requirements of this section. In addition, a few minor revisions for clarity were made to this proposed section following the NOPR.[55]

7. Section 12.36—Report on Periodic Inspection

56. Existing § 12.36 deals with emergency corrective measures. As discussed further below,[56] the NOPR proposed to combine the requirements for emergency corrective measures contained in existing § 12.36 and the requirements for corrective measures after the report as outlined in existing § 12.39 under a single ''corrective measures'' heading in § 12.41.

57. As proposed in the NOPR, new § 12.36 establishes the requirements for the periodic inspection report, which serves a similar purpose to existing § 12.37 (report of the independent consultant) with several notable changes. Existing § 12.37(b) currently requires initial reports filed under subpart D to include general project information (*e.g.,* project descriptions, maps, design summary information, geologic information) and allows licensees to incorporate by reference existing information and analyses contained in previously-prepared independent consultant reports (existing § 12.37(b)(2)). The final rule eliminates

[50] *See, e.g.,* NHA Comments at 7; CEATI Comments at 8–9.

[51] *See* NHA Comments at 7.

[52] *See* CEATI Comments at 10.

[53] *See id.*

[54] *See* NHA Comments at 7.

[55] Section 12.35(a), which requires the independent consultant team to review prior reports ''to have, at the time of the periodic inspection, a full understanding of the . . . downstream hazard . . . of the project works'' was revised to add ''*upstream and* downstream hazard.'' Section 12.35(d)(3), addressing review of dam and public safety programs, was revised to specify review of ''*public* access restrictions.''

[56] *See infra* PP 93–96.

the practice of differentiating between initial and subsequent reports and will require every periodic inspection report to meet the same standard, without relying on the practice of incorporating by reference information or analyses contained in earlier reports.

58. Section 12.36(b) of the final rule lists specific evaluations that must be documented in a periodic inspection report. These pertain to the surveillance, monitoring, and performance of the project, with a focus on whether any potential failure modes, previously identified or not, are active, developing, or warrant further evaluation at the time of the periodic inspection.

59. As proposed in the NOPR, the final rule eliminates the provisions that previously allowed independent consultants to incorporate the previous independent consultant's report by reference and document only information that has changed since the previous report. Section 12.36(c) provides a list of items which require a status update and an evaluation of any changes since the previous inspection.

60. Existing provisions in §§ 12.37(c)(4) through (8) are retained in §§ 12.36(d) through (h) with minor changes to ensure consistency with other revisions.

61. In response to the NOPR, commenters sought clarity on the independent consultant team's review and assessment of previous engineering analyses and reports.[57] Specifically, commenters questioned whether independent consultants may, after reviewing previous reports, conclude that they concur with the analyses and results and that the content of the previous reports need not be recreated. In addition, certain commenters, such as CEATI and Central Nebraska, advocated for the removal of paragraph (b)(5)(iii), which would require the independent consultant team to review the adequacy of the Owner's Dam Safety Program.[58] Central Nebraska and NHA reiterated similar concerns with respect to the independent consultant team's review of the Public Safety Plan, noting that the review should be limited to the licensee's compliance with the plan rather than a review of the plan's adequacy.[59]

62. In reviewing and assessing previous engineering analyses and reports, the independent consultant team's summary must not simply state that the team agrees with the report findings, but instead must provide a clear rationale or basis for why the team agrees with the report findings. The independent consultant team's review of the Owner's Dam Safety Program, a required component of the periodic inspection (as well as the comprehensive assessment) is not the same as the external audit of the Owner's Dam Safety Program described in § 12.65.[60] For the purposes of the periodic inspection or comprehensive assessment, the Owner's Dam Safety Program review is intended to provide the independent consultant team an opportunity to provide their observations and findings from their interactions with the licensee staff (*e.g.,* managers, dam safety engineers, and operators) related to the licensee's implementation of and compliance with its Owner's Dam Safety Program at the particular project being inspected.[61] The same is true of the independent consultant team's review of the Public Safety Plan. The final rule revises this section to specify that the report must be sealed with a professional engineer's seal (§ 12.36(h)), to delete informational references to the Engineering Guidelines, and to incorporate other minor edits. No other substantive revisions were made to this proposed section following the NOPR.

8. Section 12.37—Comprehensive Assessment

63. Existing § 12.37 establishes requirements for independent consultant-prepared reports. As discussed elsewhere in this final rule, the revisions to §§ 12.36 and 12.38 incorporate this information for reports on periodic inspections and comprehensive assessments, respectively.

64. Section 12.37 of the final rule establishes the scope of a comprehensive assessment, the more intensive of the two tiers of part 12 inspection. As many components of the comprehensive assessment are identical to or build upon the periodic inspection, several paragraphs of this section cross-reference the corresponding periodic inspection requirements in § 12.35.

65. In addition to those elements required for a periodic inspection set forth in § 12.35, a comprehensive assessment must include a review of prior reports and analyses of record, a review of the Supporting Technical Information Document, a Potential Failure Mode Analysis, and a risk analysis. A comprehensive assessment has an expanded scope compared to the existing independent consultant's inspection. Section 12.37(a)(2) requires the independent consultant team to perform a more detailed review of existing documentation, including as-built drawings, monitoring data, and analyses of record, than required by the current independent consultant's inspection.

66. Section 12.37(f) requires a comprehensive assessment to include a Potential Failure Mode Analysis, which is already standard practice for part 12 inspections. D2SI has developed draft Chapter 17 of the Engineering Guidelines, which describes how to conduct a Potential Failure Mode Analysis. As discussed above, the Commission has solicited and received public comments on draft Chapter 17 in Docket No. AD20–22–00.[62] The final version of Chapter 17 is available on the FERC Division of Dam Safety and Inspections website.[63]

67. Section 12.37(g) incorporates a semi-quantitative risk analysis as part of the scope of a comprehensive assessment. Other Federal agencies, including Reclamation, the Corps, and the Tennessee Valley Authority, have incorporated this type of analysis into their systematic comprehensive dam safety reviews. FEMA also provides recommendations and guidance for the performance of semi-quantitative risk analysis.[64] D2SI developed draft Chapter 18 of the Engineering Guidelines to provide guidance describing the process of, and procedures for performing, a semi-quantitative risk analysis. As discussed above, the Commission has solicited

[57] *See, e.g.,* CEATI Comments at 10; Central Nebraska Comments at 2.

[58] *See* CEATI Comments at 11; Central Nebraska Comments at 2; *see also* NHA Comments at 7 (expressing concern that the scope of the periodic inspection includes review of the Owner's Dam Safety Plan and Public Safety Plan).

[59] *See* Central Nebraska Comments at 2; NHA Comments at 7.

[60] The purpose of the external audit or peer review is to provide a holistic review of the Owner's Dam Safety Program by evaluating its efficacy across the owner's portfolio of projects to which the program applies. This review is to be conducted every five years and should focus on the owner's corporate program for dam safety, including, but not limited to, communication, training, and organizational structure and risk reduction strategies intended to foster a strong dam safety culture within the owner's organization as a whole.

[61] NHA suggests that requiring review of the Owner's Dam Safety Program as part of the periodic inspection ''could create significant exposure to liability for an [independent consultant] who is highly qualified with respect to the technical and operational aspects of the project, but not with respect to evaluating organizational programs and effectiveness.'' NHA Comments at 7. However, in Commission staff's experience this has not been an issue.

[62] *See supra* P 15.

[63] *See supra* note 21.

[64] FEMA, *Federal Guidelines for Dam Safety Risk Management* (Jan. 2015), *https://www.fema.gov/sites/default/files/2020-08/fema_dam-safety_risk-management_P-1025.pdf.*

and received public comments on draft Chapter 18 in Docket No. AD20–23–00.[65] The final version of Chapter 18 is available on the FERC Division of Dam Safety and Inspections website.[66]

68. Section 12.37(g) permits the Regional Engineer to waive the requirement that a comprehensive assessment must include performance of a risk analysis. This waiver provision allows the Commission to focus its efforts on projects that present greater risk to life, health, and property, and provides flexibility for D2SI staff to gradually phase in the risk analysis component of a comprehensive assessment, allowing sufficient time for D2SI staff to develop and deliver training on the risk analysis procedures to D2SI staff, licensees, and consultants. It also can provide regulatory relief to licensees, where appropriate.

69. In response to the NOPR, commenters requested clarity on performing a Potential Failure Mode Analysis,[67] questioned the appropriateness of requiring a risk analysis as part of a comprehensive assessment for owners with a small number of dams,[68] and commented on the scope and cost to perform a risk analysis.[69]

70. As more fully described in the Engineering Guidelines, the Potential Failure Mode Analysis is a process used to identify, describe, and evaluate the credibility and significance of potential failure modes.[70] A Potential Failure Mode Analysis is the first step in conducting a risk analysis, which evaluates significance from a risk perspective by categorizing potential failure modes by likelihood and consequence in an effort to prioritize dam safety activities. Chapters 17 and 18 of the Engineering Guidelines provide procedural guidance for performing a Potential Failure Mode Analysis and a risk analysis for a comprehensive assessment, respectively.

71. As to concerns about requiring a risk analysis as part of a comprehensive assessment for owners with a small portfolio of dams, risk is not a function of the number of dams an entity owns. Moreover, the scope of the risk analysis has been designed so that it may be tailored to specific project conditions. The guidance in Chapter 18 of the Engineering Guidelines provides for a scalable approach to performing the risk analysis depending on the type, complexity, and size of the project works. Larger and more complex project works will generally take more effort to analyze than projects with smaller and less complex works. The appropriate scope of a risk analysis, as well as associated costs for performing such analysis, have been carefully considered to provide only that level of effort needed to obtain the information necessary to prioritize risk measures. The final rule adds a sentence to § 12.37(a) to clarify that it is the licensee's responsibility to provide to the independent consultant team all information, reports, and analyses of record necessary to fulfill the requirements of this section and deletes informational references to the Engineering Guidelines. No other substantive revisions were made to proposed § 12.37 following the NOPR.

9. Section 12.38—Report on Comprehensive Assessment

72. Existing § 12.38 describes the timeline for submitting reports on an independent consultant's inspection. These requirements are relocated to § 12.40, discussed below.

73. As proposed in the NOPR, § 12.38 of the final rule establishes the requirements for the report on a comprehensive assessment. As with the corresponding section regarding a report on a periodic inspection, the Commission is eliminating the difference between initial and subsequent reports and will require every comprehensive assessment report to meet the same standard.

74. Section 12.38(b) references § 12.36(b) and identifies additional items that require specific evaluation in the comprehensive assessment report. In addition to those elements required for a periodic inspection, a comprehensive assessment report must include an evaluation of: Spillway adequacy; the potential for internal erosion and/or piping of embankments, foundations, and abutments; structural integrity and stability of all structures under credible loading conditions; any other analyses of record pertaining to geology, seismicity, hydrology, hydraulics, or project safety; and the Supporting Technical Information Document, Potential Failure Mode Analysis, and risk analysis. An evaluation of an analysis of record must include an evaluation of the accuracy, relevance, and consistency with the current state of the practice of dam engineering, and the comprehensive assessment report must include clear documentation of the independent consultant team's rationale. If the independent consultant team is unable to review any analysis of record or disagrees with the analysis of record in any way, the independent consultant must recommend new analyses.

75. In the NOPR, the Commission also proposed to eliminate provisions that allow independent consultants to incorporate the previous independent consultant's report by reference and document only that information that has changed since the previous report. By referencing the periodic inspection report requirements (§ 12.36(c)) (*i.e.,* report on periodic inspection), § 12.38(c) requires the independent consultant to provide, across seven categories, a status update and evaluation of any changes since the previous inspection.

76. The existing provisions in §§ 12.37(c)(4) through (8) are retained in §§ 12.38(d) through (h) of the final rule with minor changes to ensure consistency with other revisions adopted herein.

77. In response to the NOPR, commenters requested clarity on appropriate actions to take when the analyses of record are unavailable.[71]

78. Section 12.38(c)(3) requires the independent consultant to provide recommendations to perform new analyses if the analyses of record are not available to be reviewed. It is incumbent on licensees to either locate the analysis of record or provide a plan and schedule to complete a new analysis. Additional guidance on reviewing and evaluating the analyses of record and how that information should be documented and classified is provided in Chapter 16 of the Engineering Guidelines. As discussed above, the Commission has solicited and received public comments on draft Chapter 16 in Docket No. AD20–21–00.[72] The final version of Chapter 16 is available on the FERC Division of Dam Safety and Inspections website.[73] Apart from eliminating informational references to the Engineering Guidelines, no substantive revisions were made to proposed § 12.38 following the NOPR.

[65] *See supra* P 15.

[66] *See supra* note 21.

[67] *See, e.g.,* NHA Comments at 10; CEATI Comments at 11.

[68] *See* CEATI Comments at 11.

[69] *See, e.g.,* NHA Comments at 10; CEATI Comments at 11.

[70] Chapter 17 of the Engineering Guidelines explains that a potential failure mode is a way that failure could occur and defines failure, for the purposes of the potential failure mode analysis, as an uncontrolled release of the reservoir, in whole or in part; the inability of project works or components to perform their intended function; or project works or components performing in an impaired or compromised fashion; any of which results in an adverse consequence.

[71] *See, e.g.,* NHA Comments at 10; CEATI Comments at 12.

[72] *See supra* P 15.

[73] *See supra* note 21.

10. Section 12.39—Evaluation of Spillway Adequacy

79. Existing § 12.39 describes the process for taking corrective measures after the independent consultant's report is filed with the Regional Engineer. As proposed in the NOPR, this procedure is relocated to § 12.41, discussed below. The requirement to evaluate spillway adequacy is an existing component of the part 12 inspection and is currently found in § 12.35(b) of our regulations. However, providing this information in a standalone section will highlight the importance of evaluating spillway adequacy. Accordingly, the final rule relocates the requirement to evaluate spillway adequacy to § 12.39.

80. As proposed in the NOPR, § 12.39 of the final rule would expand the existing requirements for evaluating spillway adequacy to address scenarios similar to the 2017 Oroville Dam spillway incident. When assessing spillway adequacy, independent consultants must evaluate the potential for misoperation of, failure to operate, blockage of, or debilitating damage to, a spillway, and the resulting effects on the maximum reservoir level and the potential for overtopping.

81. In response to the NOPR, NHA requested clarity on how the hydraulic adequacy evaluations will be consistently implemented and whether the credible loading conditions are standards based or risk based.[74] Central Nebraska expressed concerns that § 12.39 could result in ''efforts that could be overly broad and lead[] to the review or assumption of unreasonable levels of unlikelihood,'' and suggested instead that spillway performance be evaluated through the Potential Failure Mode Analysis process.[75]

82. The evaluation of spillway adequacy has been a longstanding assessment requirement of subpart D independent consultant inspections. The final rule requires the independent consultant as part of the spillway adequacy assessment to consider specific conditions that could limit or impact spillway discharge. Commission staff will monitor and review how these conditions are assessed and provide additional guidance on the assessment process, if needed, on a case-by-case basis. In response to NHA's question about appropriate flood loading conditions, paragraph (a) has been revised to clarify that floods up to and including the probable maximum flood must be considered in the evaluation. In addition, we have deleted the word ''structural'' from paragraphs (a) and (b) to clarify that failures could be more than structural failures and eliminated from this section an informational reference to the Engineering Guidelines.

11. Section 12.40—Time for Inspections and Reports

83. This final rule relocates the provisions regarding timelines for performing independent consultant inspections and submitting inspection reports, previously found in § 12.38, to revised § 12.40. Our existing rules maintain a five-year cycle for inspections and include provisions for initial inspections of existing licensed projects, projects licensed but not yet constructed, and all other projects; include a separate set of provisions related to projects inspected by an independent consultant prior to March 1, 1981; and authorize the Regional Engineer to grant extensions of time to file an independent consultant's inspection report.

84. Section 12.40 revises the timeline for submitting reports on inspections by independent consultants. While the current five-year interval between inspections and reports is maintained, the inspections will alternate between periodic inspections and comprehensive assessments; thus, there is a ten-year interval between any pair of consecutive comprehensive assessments or periodic inspections, but a significant project review every five years.

85. Section 12.40(a) consolidates the timing of inspections and reports for projects previously inspected by an independent consultant. Section 12.40(a)(1) maintains the five-year cycle for an independent consultant's inspection of each project development. Section 12.40(a)(2) grants the Regional Engineer the authority to require that any report due 18 months after the effective date of the final rule be either a comprehensive assessment or periodic inspection, enabling D2SI to balance the number of comprehensive assessments due each year over the 10-year cycle. Section 12.40(a)(3) requires that the first comprehensive assessment be completed, and the report on it filed, by December 31, 2038.[76]

86. Section 12.40(b) retains and updates the terminology related to existing provisions for existing licensed projects previously inspected, projects licensed but not yet constructed, and other projects.

87. Section 12.40(c) establishes the ten-year interval between comprehensive assessments and requires that a periodic inspection be performed within five years following a comprehensive assessment.

88. Sections 12.40(d) and 12.40(e) allow the Regional Engineer to extend the time to file an independent consultant's report, for good cause shown, and to require that any inspection scheduled to be performed be a periodic inspection or comprehensive assessment. For example, where a project is scheduled for a periodic inspection but a dam safety incident, extreme loading condition (*e.g.,* unprecedented flood, large earthquake, etc.), or other significant change in condition has occurred since the previous comprehensive assessment, the Regional Engineer may require that the project undergo a comprehensive assessment rather than a periodic inspection. Alternatively, for projects that have no life safety consequences and a low total project risk, the Regional Engineer may allow comprehensive assessments to be performed at an interval greater than every 10 years.

89. In response to the NOPR, commenters recommend changing the effective date to 18 months following the date of the final rule,[77] extending the due date for projects not previously inspected under Part 12 from two years to three years,[78] limiting the Regional Engineer's ability to unilaterally change the type of report to be filed,[79] and further clarifying the purpose of the preliminary report.[80]

90. Section 12.40(a)(2) has been revised to reflect that the date for a report to be filed under this subpart will be 18 months after the effective date of the final rule. Commission staff has evaluated the scope of the effort required to complete a comprehensive assessment and is confident that two years is sufficient time to complete this work and file a report. Extending this work effort over a three-year duration would provide no benefits and could negatively impact the process by extending the time between the review

[74] *See* NHA Comments at 10–11.

[75] Central Nebraska Comments at 2.

[76] This date is based on an anticipated final rule effective date in early 2022 with a corresponding first report due 18 months later in late 2023. A four-year phased implementation period (2024 through 2027) is assumed to attain full annual implementation. Full implementation should be complete after a full 10-year cycle (2027–2036). An additional two years (2037 and 2038) are provided for possible extension of time requests and any other reports that may have been delayed from the phased implementation period.

[77] *See* CEATI Comments at 13.

[78] *See id.*

[79] *See, e.g.,* NHA Comments at 11; CEATI Comments at 13.

[80] *See, e.g.,* NHA Comments at 11; CEATI Comments at 13.

of project information; conducting the inspections and performing Potential Failure Mode Analysis and semi-quantitative risk analysis meetings; and preparing the report, thus prolonging the period before corrective action could be identified and implemented. Section 12.40(e) was revised to include ''for good cause'' for the Regional Engineer to change the type of report due.

91. The purpose of the preliminary report is to demonstrate whether the independent consultant team has adequately prepared for their inspection, including the review of background material and instrumentation data. This requirement is intended to help the independent consultant team identify areas in the field that may require additional attention or effort.

92. In the NOPR, the Commission proposed to include information about the preliminary report in § 12.40(f). However, because that section covers different material, the final rule relocates the preliminary report requirement to § 12.42, which is a new, standalone section.

12. Section 12.41—Corrective Measures

93. The procedures for addressing items identified during a part 12 inspection that require corrective measures are currently set forth in § 12.39. This final rule relocates these corrective measure procedures to new § 12.41. Currently, licensees are required to submit to the Regional Engineer a plan and schedule within 60 days of filing an independent consultant's report with the Commission, and to complete all corrective measures in accordance with the plan and schedule as approved or modified by the Regional Engineer. Under the existing regulations, the Regional Engineer may extend the time for filing the plan and schedule. The final rule does not modify or eliminate these requirements.

94. Section 12.41 of the final rule incorporates the requirements of existing § 12.36 (emergency corrective measures) and § 12.39 (post-inspection corrective measures) into a single section titled ''corrective measures.'' The revisions in § 12.41(a)(1)(i) clarify that the licensee's plan and schedule must address the recommendations of the independent consultant and include investigation as an option for the licensee to implement. Section 12.41(b)(2) is added to ensure that emergency corrective measures are documented in the corrective plan and schedule required by § 12.41(a)(1).

95. In response to the NOPR, CEATI recommends limiting the corrective plan to only those items that relate to a potential failure mode or will improve or change the understanding of risk associated with the project works.[81] Commenters further recommend eliminating the requirement to submit an annual status report,[82] and creating an appeals board to offer technical guidance to the Part 12 process.[83]

96. Section 12.41(a)(1)(ii) already includes provisions for taking no action for recommended corrective measures in those cases where it is justifiable. The annual status report provides an opportunity to periodically review and update the status (*e.g.,* completed, in progress, outstanding, etc.) of previously-identified corrective measures and provides an opportunity to revisit the priority and status of the measures to ensure that they are acted upon. We do not consider an annual status update to be too frequent. Commission staff has access to other resources for technical advice and review and therefore there is no need to create a separate appeals board or board of consultants. Based on a comment received from CEATI on Chapter 16 of the Engineering Guidelines,[84] § 12.41(b) was revised to reference § 12.3(b)(4) of this part, which defines a condition affecting the safety of a project or project works, to demonstrate conditions that would be considered appropriate for the reporting of an emergency corrective measure. In addition, the final rule revises the first sentence of § 12.41(b) to emphasize that it is the licensee's responsibility to ensure that the independent consultant complies with the notification requirements of this paragraph. No other substantive revisions were made to proposed § 12.41 following the NOPR.

13. Section 12.42—Preliminary Reports

97. As discussed above, the final rule relocates requirements regarding preliminary reports that the NOPR had proposed for inclusion in § 12.40(f) to a new section of subpart D, § 12.42.[85] This section requires the independent consultant team, at least 30 days before performing a periodic inspection or comprehensive assessment, to prepare and file a preliminary report. The purpose of the preliminary report is two-fold: (1) It documents the independent consultant team's initial findings after reviewing the project information; and (2) it demonstrates the team's preparation for conducting the site inspection. If the preliminary report does not clearly demonstrate that the independent consultant team is adequately prepared for the inspection, the Regional Engineer may require the inspection be postponed.

14. Alaska-Specific Concerns

98. A few commenters asserted that in broadening the scope of independent consultant dam safety inspections, the NOPR takes a one-size-fits-all approach that will place an unfair burden on Alaska's smaller, less complex projects.[86] The Alaska commenters further suggest that the NOPR underestimated the costs to small projects of the proposed changes to independent consultant inspections, particularly by failing to consider the costs associated with a larger inspection team traveling to project sites in Alaska, including the cost of remote travel.[87]

99. The Commission did not take a one-size-fits-all approach to the changes to the project safety inspection program proposed in the NOPR and adopted, with modifications, in this final rule. As explained above, the revised inspection approach provides for a two-tier inspection structure, consisting of a periodic inspection (§ 12.35) and a more robust comprehensive assessment (§ 12.37). The size of the inspection team is dependent on the project so that it is ''commensurate with the scale, complexity, and relevant technical disciplines of the project and type of review, inspection, and assessment being performed.'' [88] Moreover, § 12.31(b) of the final rule defines an independent consultant team as consisting of one or more people. For less complex projects, one individual may be able to satisfy the requirements of an independent consultant team. Finally, the final rule incorporates provisions to allow less complex project licensees to seek an exemption from the requirements of subpart D (§ 12.33(a)), a waiver of the 10-year requirement to perform a comprehensive assessment (§ 12.34), or a waiver of the requirement to perform a risk analysis as part of the comprehensive assessment (§ 12.37(g)). Each of these provisions is designed to allow independent consultant

[81] *See* CEATI Comments at 14.

[82] *See, e.g.,* NHA Comments at 12; CEATI Comments at 14.

[83] *See* NHA Comments at 12.

[84] *See* CEATI's September 15, 2020 Comments on Chapter 16 of the Engineering Guidelines at 28 (filed in Docket No. AD20–21–000).

[85] *See supra* P 92.

[86] *See, e.g.,* Alaska Power Association's September 18, 2020 Comments (Alaska Power Comments); Cooper Valley Electric's September 14, 2020 Comments (Cooper Valley Comments); Alaska Electric Light & Power Company's September 18, 2020 Comments (Alaska Electric Comments); *see also* U.S. Senator Lisa Murkowski's November 5, 2020 letter (supporting Alaska Power Association's comments).

[87] *See, e.g.,* Alaska Power Comments at 3.

[88] 18 CFR 12.31(b)(3).

inspections to be tailored to the unique circumstances and safety issues of each project and, if circumstances warrant, to eliminate or reduce the frequency of certain subpart D requirements. Comments specific to burden and costs estimates for the information collection activities associated with this final rule are addressed below.[89]

B. Owner's Dam Safety Program

100. As the NOPR explained, the Commission began developing its Owner's Dam Safety Program guidance following the December 2005 failure of Taum Sauk Dam, in an effort to encourage licensees to foster and prioritize a strong dam safety culture among their organizations and to help decrease the likelihood of preventable dam safety incidents. In August 2012, the Director of D2SI issued letters to all owners of high or significant hazard potential dams requiring them to develop and submit an Owner's Dam Safety Program.[90] Additional information and guidance on the development of an Owner's Dam Safety Program has been available on the Commission's website since this time. New subpart F consolidates and codifies that guidance.

1. Section 12.60—Applicability

101. Section 12.60 specifies that an Owner's Dam Safety Program must be submitted by any licensee that has a dam or other project work with a high or significant hazard potential. This does not represent a change from existing practice.

102. No comments were received on this section. Following the NOPR, the cross-reference to the definitions of high or significant hazard potential was updated based on the revised definitions contained in § 12.3(b)(13)(i) and (ii). No other revisions were made to proposed § 12.60 following the NOPR.

2. Section 12.61—Definitions

103. Section 12.61 defines the terms ''Chief Dam Safety Engineer'' and ''Chief Dam Safety Coordinator,'' as used in subpart F. The Chief Dam Safety Engineer or Chief Dam Safety Coordinator is defined as the person who oversees the implementation of the Owner's Dam Safety Program and has primary responsibility for ensuring the safety of the licensee's dams and other project works. The only difference between the definitions is that a Chief Dam Safety Engineer must be a licensed professional engineer.

104. In response to the NOPR, commenters requested clarification of professional engineer licensure,[91] and suggested that flexibility should be built in to allow licensees to use different terms than those provided in this section.[92]

105. Individual states determine the requirements for the licensure of professional engineers. Those performing professional engineering services are responsible for following applicable state regulations. The final rule revises § 12.61(a) to indicate that the Chief Dam Safety Engineer must be a licensed *professional* engineer *with experience in dam safety.* For consistency, the final rule also revises § 12.61(b) to clarify that the Chief Dam Safety Coordinator in ''is not required to be a licensed *professional* engineer.'' The terms Chief Dam Safety Engineer and Chief Dam Safety Coordinator should be used consistently in documentation and correspondence with the Commission. No other substantive revisions were made to proposed § 12.61 following the NOPR.

3. Section 12.62—General Requirements

106. Section 12.62 establishes three general requirements for an Owner's Dam Safety Program. Section 12.62(a) requires an Owner's Dam Safety Program to designate either a Chief Dam Safety Engineer or a Chief Dam Safety Coordinator. Any Owner's Dam Safety Program that applies to one or more dams or other project works with a high hazard potential must designate a Chief Dam Safety Engineer. Section 12.62(b) requires the Owner's Dam Safety Program to be signed by the owner and the Chief Dam Safety Engineer or Chief Dam Safety Coordinator, as applicable. Section 12.62(c) requires the Owner's Dam Safety Program to be reviewed and updated on a periodic basis. Although § 12.62(d) permits the owner to designate outside parties, such as consultants, to serve as Chief Dam Safety Engineer or Chief Dam Safety Coordinator, the owner retains ultimate responsibility for the safety and day-to-day implementation of the projects.

107. Commenters on the NOPR requested clarity as to who from the owner's organization should sign the Owner's Dam Safety Program,[93] recommended adding a requirement to provide formal documentation of any agreement delegating an individual outside the owner's organization to serve as a Chief Dam Safety Engineer or Chief Dam Safety Coordinator,[94] and stated that the dam safety industry might not have sufficiently qualified individuals to perform the requirements.[95]

108. Owner's organizations vary widely in type and size, from sole proprietorships to corporations to municipalities. The requirement in § 12.62(b) that the owner, along with the Chief Dam Safety Engineer or Chief Dam Safety Coordinator, sign the Owner's Dam Safety Program ensures that the legal entity responsible for the dam(s) or other project works accepts the program that is established to promote dam safety within their organization in order to help decrease the likelihood of preventable dam safety incidents. It is up to each organization to determine the appropriate signatory for signing the Owner's Dam Safety Program.

109. The final rule revises § 12.62 to include a statement that any delegation of authority made in accordance with the requirements of this section must be documented in the Owner's Dam Safety Program and to clarify that the responsibilities that may be delegated include program implementation. In response to commenters' concerns about a lack of qualified individuals, provisions for developing and implementing an Owner's Dam Safety Program have been in place as guidance for many years and industry has been able to provide adequate resources and training to satisfy the requirements of this section. Moreover, it is crucial that licensees accept responsibility for, and take all reasonable steps to implement, an effective safety program. The cross-reference to the definition of high hazard potential was updated based on the revised definition contained in § 12.3(b)(13)(i). No other substantive revisions were made to proposed § 12.62 following the NOPR.

4. Section 12.63—Contents of Owner's Dam Safety Program

110. Section 12.63 establishes the minimum contents of an Owner's Dam Safety Program. Sections 12.63(a)–(f) each correspond to a topic area that should be addressed in an Owner's Dam Safety Program document and identified in the document's table of contents, as provided in current D2SI guidance available on the Commission's website.[96] Under § 12.63(g), the NOPR

[89] *See* discussion *infra* Part V.A.

[90] Letter to All Licensees and Exemptees of High and Significant Hazard Potential Dams Requiring Submittal of an Owner's Dam Safety Program, August 2012, *https://www.ferc.gov/sites/default/files/2020-04/letter-submit-odsp.pdf.*

[91] CEATI Comments at 14–15.

[92] *Id.* at 15.

[93] *Id.*

[94] *Id.*

[95] NHA Comments at 12.

[96] FERC, *Outline for Owner's Dam Safety Program—Table of Contents, https://www.ferc.gov/*

Continued

also proposed that the Owner's Dam Safety Program should include any additional information that may be recommended by the Engineering Guidelines, a draft chapter of which is in development and will be provided at a later date for public review and comment.

111. In response to the NOPR, commenters recommended minor editorial changes and requested clarification of what is meant by ''other information described by the Guidelines'' in § 12.63(g).[97] Existing guidance pertaining to the content of an Owner's Dam Safety Program is available on the Commission's website. To eliminate any confusion, the final rule deletes the references to the Engineering Guidelines. No other substantive revisions were made to proposed § 12.63 following the NOPR.

5. Section 12.64—Annual Review and Update

112. Section 12.64 requires licensees to review and update an Owner's Dam Safety Program. This section specifies that 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 that any findings, analysis, corrective measures, or revisions be submitted to the Regional Engineer.

113. In response to the NOPR, commenters recommended deleting the entire section as it appears to duplicate submittal of this information elsewhere,[98] requested clarification as to whether the annual review of the Owner's Dam Safety Program will take the place of the existing annual internal audit,[99] and requested clarification as to which Regional Engineer the Owner's Dam Safety Program should be submitted for owners with dams in more than one Regional Office's territory.[100]

114. The annual review and update will replace what commenters, such as NHA, refer to as the existing annual internal audit. Further, the report on the annual review of the Owner's Dam Safety Program should not be conflated with the Owner's Inspection Preparation Form.[101] These are not duplicative efforts. The Owner's Inspection Preparation Form is an optional form that an owner may choose to complete to help their staff prepare for a field inspection conducted by D2SI staff. This form is not typically submitted to the Commission. Clarification of the annual review process and how Owner's Dam Safety Programs should be filed for owners with dams in multiple Regional Offices will be provided in future Commission guidance. No revisions were made to proposed § 12.64 following the NOPR.

6. Section 12.65—Independent External Audit and Peer Review

115. Section 12.65 describes the requirements for independent external audits and peer reviews, which must be completed at least once every five years for any Owner's Dam Safety Program that applies to one or more dams or other project works having a high hazard potential classification. The qualifications of the review team must be submitted to the Regional Engineer in advance, and the Regional Engineer's acceptance must be obtained prior to performing the audit or peer review. The Commission will review the qualifications to ensure that the review team has sufficient expertise and a defined plan to review the Owner's Dam Safety Program. The findings of the external audit or peer review team must be documented in a report to be reviewed by licensee staff, including senior management, and submitted to the Regional Engineer.

116. In response to the NOPR, NHA requested that the external audit of the Owner's Dam Safety Program remain separate from the periodic inspection and comprehensive assessment,[102] and CEATI recommended identifying a baseline date to be used for the first audit from which the deadlines for all subsequent audits could be determined.[103] Commenters also asked about the difference between an independent external audit and a peer review,[104] and suggested adding information for terms which ensure the independence of the proposed auditor or peer review team.[105]

117. As explained above, the external audit of the Owner's Dam Safety Program is distinct from the independent consultant team's review of the Owner's Dam Safety Program during the periodic inspection (§ 12.35(d)(4)) and comprehensive assessment (§ 12.37(d)).[106] Per existing practice, the date of the initial external audit report of the Owner's Dam Safety Program establishes the date of the subsequent five-year audit reports. Generally, an external audit would be more limited in scope and the minimum level of effort compared to the peer review process. A licensee may elect to complete a more detailed peer review performed by a team of at least three reviewers. If necessary, the difference between an external audit and a peer review will be further clarified in future Commission guidance. The final rule revises § 12.65(b) to include a requirement that the statement of qualifications for the proposed auditor must also demonstrate the independence of the auditor or peer review team from the licensee and its affiliates.

118. Finally, the final rule updates an internal cross-reference to the definition of hazard potential and removes the statement that additional guidance is provided in the guidelines. No other substantive revisions were made to § 12.65 following the NOPR.

C. Public Safety and Miscellaneous Updates

119. In the NOPR, the Commission proposed several changes to subparts A, B, C, and E of 18 CFR part 12, most of which are minor in nature and necessary to ensure consistency with the replaced subpart D and new subpart F. The two most notable changes relate to the reporting of public safety incidents and the development and submittal of public safety plans.

1. Subpart A—General Provisions

120. Subpart A describes the general provisions and definitions that apply under part 12 of the regulations. The NOPR proposed to update or add several definitions and make other minor changes to ensure consistency with replaced subpart D and new subpart F. Section 12.3(b)(4) provides a list of conditions affecting the safety of project works. The NOPR proposed to update two of these conditions to ensure their definitions are consistent as applied in current practice. In addition, the NOPR proposed to add ''overtopping of any dam, abutment, canal, or water conveyance'' to the list of conditions that could affect project safety and new definitions for ''Water Conveyance,'' ''Engineering Guidelines,'' and ''Owner's Dam Safety Program.'' The NOPR proposed additional minor revisions in subpart A to ensure

sites/default/files/2020-04/outline-with-discussion.pdf.

[97] *See, e.g.,* CEATI Comments at 16; NHA Comments at 12.

[98] *See, e.g.,* NHA Comments at 12–13.

[99] *Id.* at 13.

[100] CEATI Comments at 16.

[101] The Owner's Inspection Preparation Form is an outline of specific items related to the Owner's Dam Safety Program to be discussed during a field inspection conducted by D2SI staff. This form is available on the Commission's website at *https://www.ferc.gov/sites/default/files/2020-04/what-do-we-see.pdf.*

[102] NHA Comments at 13.

[103] CEATI Comments at 16.

[104] *Id.*

[105] *Id.* at 17.

[106] *See supra* P 62.

consistent terminology and to update internal cross-references.

121. In addition, the Commission proposed to add § 12.4(d) to make clear that licensee non-compliance with any dam safety directive issued by the Commission, a Regional Engineer, or other authorized Commission representative could result in sanctions such as the Commission issuing a cease generation order, assessing civil penalties, or revoking a project's license pursuant to section 31 of the FPA.[107]

122. In response to the NOPR, NHA recommended that the Commission further clarify the definitions of significant and low hazard potential and asked why the phrase ''including recreation'' was added to § 12.3(b)(4)'s definition of ''condition affecting the safety of a project or project works.'' [108] CEATI recommended defining the terms ''Project,'' ''Project Works,'' ''Dam,'' and ''Development'' and suggested that the Commission develop a different hazard potential scheme for canals and water conveyance facilities.[109]

123. Section 12.3(b)(13) of the final rule adds separate definitions for ''Significant hazard potential'' (§ 12.3(b)(13)(ii)) and ''Low hazard potential'' (§ 12.3(b)(13)(iii)). Adding the phrase ''including recreation'' clarifies § 12.3(b)(4)'s definition of ''Condition affecting the safety of a project or project works'' by providing a statutorily-defined example of ''other beneficial public uses.'' [110] This addition does not expand the original definition nor does it represent a departure from D2SI's current practice. The terms ''Dam'' and ''Development'' are defined in §§ 12.3(b)(6) and 12.3(b)(7), respectively. The terms ''Project'' and ''Project Works'' are defined in section 3 of the FPA,[111] as stated in § 12.3(a). For consistency with the statute's terminology, the final rule eliminates references in proposed § 12.3 to ''project feature'' by substituting in its place the term ''project work.'' [112] For the purposes of defining hazard potential, the Commission believes it is appropriate to extend the current approach used to define hazard potential for dams to canals and other water conveyances. The emphasis on the definition of hazard potential is based on the resulting consequences should the structure fail and not on the structure itself. Therefore, the Commission does not agree with the recommendation to develop a different hazard potential definition or approach for canals and water conveyance structures.

124. The final rule deletes the definition of and an additional reference to the ''Guidelines.'' The Engineering Guidelines remain available on the Commission's website.

125. The term ''canal'' is deleted in §§ 12.3(b)(4)(xiii) and 12.3(b)(13) as its usage is redundant with the term ''water conveyance'' also used in each paragraph. For clarity, one of the conditions affecting safety, found in § 12.3(b)(4)(xi), was revised from ''Significant instances of vandalism or sabotage'' to read ''Security incidents (physical and/or cyber).'' No other substantive changes were made to subpart A following the NOPR.

2. Subpart B—Reports and Records

126. Subpart B describes the requirements for reporting, verifying, and providing records to the Commission regarding dam safety-related matters, including public safety incidents. The NOPR proposed minor revisions to ensure consistency with other sections of the regulations and the dam safety program as implemented. In addition, the NOPR proposed additional reporting of public safety-related incidents that involve deaths, serious injuries, or rescues.

127. Revised § 12.10(a)(1) expresses the Commission's preference that initial reports of conditions affecting the safety of a project or its works are made within 72 hours of discovery of the condition. The reporting of an incident to the Commission must not in any way inhibit an emergency response to that incident.

128. Revised § 12.10(b) requires licensees to report rescues in addition to deaths and serious injuries, and clarifies the definition of ''project-related'' for the purpose of complying with the mandatory reporting of deaths, serious injuries, and rescues that are considered or alleged to be project-related. For precision and to use terminology that is generally accepted in the dam safety community, the NOPR proposed to replace the term ''project-related accident'' with ''project-related incident.''

129. Currently, § 12.10(b)(4) defines ''project-related,'' as ''any deaths or serious injuries involving a dam, spillway, intake, or power line, *or which take place at or immediately above or below a dam.*'' [113] In D2SI staff's experience, the final clause of the definition has been the most problematic for licensees to apply, often leading licensees to report as project-related those deaths or serious injuries that occur near a dam but are wholly unrelated to the project or its operation. The NOPR proposed to revise the definition of ''project-related'' to make clear that an incident is project-related only if it occurs at project works, involves changes in water levels resulting from operations of project works, or is otherwise attributable to the project or its operation.

130. In response to the NOPR, CEATI suggested that a threshold for reporting rescues and serious injuries should be established by excluding minor incidents not requiring treatment at a medical facility.[114] NHA requested clarification of the reporting requirements for safety related incidents and clarification of safety related incidents related to changes in water levels or flows.[115]

131. For clarity, the final rule revises the general structure of § 12.10(b) to follow § 12.10(a). Section 12.10(b)(1) provides the reporting requirements for initial reports of deaths, serious injuries, or rescues. The initial report can be made by email or telephone. This is a change from the initial written reporting requirements proposed in the NOPR. For consistency, the final rule applies this same change to § 12.10(a)'s reporting requirements for initial reports of conditions affecting the safety of a project or its works to make clear that initial reports can be made by email or telephone. Accordingly, the final rule deletes from § 12.10(a) all references to ''oral reports'' and adds in its place ''initial reports.''

132. Section 12.10(b)(2) provides the requirements for written reports by outlining three categories of incidents and indicating whether a written report is required: (i) Any death, serious injury, or rescue that is considered or alleged to be project-related (written

[107] *See* NOPR, 172 FERC ¶ 61,061 at P 78; 16 U.S.C. 823b, 825h. In response to a request to clarify § 12.4(c)–(d)'s use of the phrase ''any order or directive,'' see NHA Comments at 3, we note that by adding new § 12.4(d), the final rule does not create new penalty authority. Rather, this addition simply serves as a reminder that the Commission's existing penalty authority, derived from FPA section 31, applies to the requirements of part 12 of the Commission's regulations.

[108] NHA Comments at 3.

[109] CEATI Comments at 3–4.

[110] As revised, the first sentence of 12.4(b) clarifies that the definition of *Condition affecting the safety of a project or project works* includes any condition, event, or action at the project which might compromise the ability of any project work to function safely for its intended purposes, including other beneficial public uses such as recreation.

[111] 16 U.S.C. 796.

[112] To ensure consistent use of the terms ''project works'' or ''project work'' (if referring to a singular structure), the final rule makes similar revisions in §§ 12.30, 12.35, 12.60, 12.61, 12.62, and 12.65.

[113] 18 CFR 12.10(b)(4) (emphasis added).

[114] CEATI Comments at 4–5.

[115] NHA Comments at 3–4.

report required); (ii) any death that is not project-related (copy of media article or law enforcement report accepted); and (iii) any serious injury or rescue that is not project-related (no written report required). This structure should clarify the written reporting requirements for each type of incident.

133. In addition, proposed § 12.10(b)(3) from the NOPR was deleted, as it provided an outdated form of hard copy submittal (newspaper clipping); proposed § 12.10(b)(4) was relocated to § 12.10(b)(3) of the final rule. The final rule further revises § 12.10(b)(3)(iii) to clarify that the definition of ''project-related'' also includes any deaths, serious injuries, or rescues that involve a licensee employee, contractor, or other person performing work at a licensed project facility and are related in whole or in part to the work being performed. The final rule also adds new § 12.10(b)(4) to clarify that, for incident reporting purposes, a serious injury includes any injury that results in treatment at a medical facility or a response by licensee staff or another trained professional.

134. Finally, the NOPR proposed and the final rule adopts two changes to existing requirements concerning the maintenance of records. First, the final rule revises § 12.12(b)(3) to permit storage media other than microform, consistent with part 125 of the Commission's regulations. Second, the final rule adds § 12.12(d) to require the licensee to provide, to the Regional Engineer, physical and electronic records necessary to ensure the safety of project works, for all projects subject to subpart D or as otherwise requested by the Regional Engineer. Under § 12.12(b)(2)(ii)(A) of our existing regulations, which remains unchanged, the Regional Engineer has the authority to require an applicant or licensee to submit such reports or information. NHA suggests that there is no need to require physical records in addition to electronic copies and recommends deleting the reference to ''physical'' in § 12.12(d).[116] We decline to adopt NHA's recommendation because hard copies of certain records are necessary in case of a power outage or for those instances when electronic files might not be available. No changes were made to proposed § 12.12 following the NOPR.

3. Subpart C—Emergency Action Plans

135. Emergency action plans, which must be developed in consultation with federal, state, and local public health and safety officials, are designed to provide early warning to upstream and downstream inhabitants, property owners, operators of water-related facilities, recreational users, and others in the vicinity who might be affected in the event of a project emergency.[117] Subpart C describes the general requirement that applicants and licensees develop and submit emergency action plans, explains when an exemption from this requirement may be warranted, identifies the required contents of the plans, and describes the timing for plan filing and regular updating.

136. In the NOPR, the Commission proposed only minor revisions to §§ 12.20, 12.22, and 12.24 to ensure consistency with the filing guidelines available on the Commission's website and to update terminology with respect to the Engineering Guidelines.

137. The Commission received no comments on its proposed revisions to subpart C. The final rule deletes from § 12.22 two references to the Engineering Guidelines. No other revisions were made to proposed subpart C following the NOPR.

4. Subpart E—Other Responsibilities of Applicant or Licensee

138. Subpart E describes other applicant and licensee responsibilities, including the requirement to install warning and public safety devices, and test spillway gates. In the NOPR, the Commission proposed to replace one section and update another to codify a function of the dam safety program as currently implemented and to ensure the use of consistent terminology in conjunction with the proposed replacement of subpart D. The Commission further explained that subpart E would be renumbered to now include §§ 12.50 to 12.54 to accommodate the proposed inclusion of additional sections in subpart D, and that the proposed revisions to subpart E would not represent a change in practice.

139. The revisions to § 12.52 (warning and safety devices, previously § 12.42) preserve the current regulatory requirement that licensees must install, operate, and maintain warning and safety devices to protect the public, with a minor revision to ensure consistency with the rest of part 12. Revised § 12.52(b) codifies existing D2SI guidance that the Commission may require a licensee to submit a public safety plan that documents the installation, operation, and maintenance of public safety devices.[118]

140. Finally, the NOPR proposed to revise § 12.54 (testing spillway gates, currently § 12.44) to replace the term ''periodic inspection'' with the more generic term ''an inspection.'' This terminology change ensures that Commission staff can continue to verify the operability of spillway gates during their routine inspections, and is intended to prevent this section from being misconstrued as applying only to a periodic inspection as it is defined and described in subpart D of this final rule.

141. In response to the NOPR, NHA asks whether the public safety plan is required to be developed in accordance with the Commission's Guidelines for Public Safety.[119] Other commenters suggested minor revisions to the text of § 12.52(a) related to protecting the public from project operations.[120]

142. Section 12.52(b) provides the provision that the Regional Engineer may require a licensee to file a public safety plan. The Guidelines for Public Safety at Hydropower Projects, available on the Commission's website, provide helpful guidance for developing and submitting public safety plans. The last sentence in § 12.52(b) was deleted to remove the reference to the guidelines. No changes to § 12.52(a) are necessary as the existing text (formerly located in § 12.42) is sufficient to ensure that licensees take appropriate warning and safety measures to protect the public from changes in flow due to project operations.[121] No substantive revisions were made to subpart E following the NOPR.

V. Regulatory Requirements

A. Information Collection Statement

143. The Paperwork Reduction Act[122] requires each federal agency to seek and obtain the Office of Management and Budget's (OMB) approval before undertaking a collection of information (including reporting, record keeping, and public disclosure requirements) directed to ten or more persons or contained in a rule of general applicability. OMB regulations require approval of certain information collection requirements contained in

[116] NHA Comments at 4.

[117] 18 CFR 12.20(b).

[118] FERC, *Guidelines for Public Safety at Hydropower Projects* (Mar. 1992), *https://www.ferc.gov/sites/default/files/2020-04/public-safety.pdf.*

[119] NHA Comments at 12.

[120] *See, e.g.,* CEATI Comments at 14.

[121] The existing text, which this final rule relocates to § 12.52(a), requires licensees to install, operate, and maintain safety devices to warn the public of fluctuations in flow from the project.

[122] 44 U.S.C. 3501–3521.

final rules published in the **Federal Register** (including deletion, revision, or implementation of new requirements).[123] Upon approval of a collection of information, OMB will assign an OMB control number and an expiration date. Respondents subject to the filing requirements of a rule will not be penalized for failing to respond to the collection of information unless the collection of information displays a valid OMB control number.

144. The following discussion describes and analyzes the collections of information modified by this final rule.

145. The Commission solicited comments on the Commission's need for the proposed information collection in the NOPR and in draft Chapters 15 through 18 of the Engineering Guidelines,[124] whether the information will have practical utility, the accuracy of the burden estimates, ways to enhance the quality, utility, and clarity of the information to be collected or retained, and any suggested methods for minimizing respondents' burden, including the use of automated information techniques. All burden estimates for all information collection activities (including those in Chapters 15 through 18 of the Engineering Guidelines) are discussed in this final rule and in the Paperwork Reduction Act supporting statement.

146. *Public Reporting Burden:* In this final rule, the Commission establishes two tiers of independent consultant safety inspection reports, codifies existing guidance related to the Owner's Dam Safety Program, and requires reporting of rescues that occur at hydroelectric projects. The final rule, in conjunction with the corresponding updates to the Engineering Guidelines, revises and adds information collection activities in 18 CFR part 12.

1. Subpart D: Independent Consultant Inspections

147. The revisions to 18 CFR part 12, subpart D do not affect the current five-year filing cycle for independent consultant's safety inspection reports. However, they do modify the scope of reports on an alternating cycle, such that the reports alternate between a periodic inspection (a reduction in scope compared to the previous inspection requirement) and a comprehensive assessment (an increase in scope compared to the previous inspection requirement). The hydroelectric facilities regulated by the Commission vary greatly in size and complexity, and there is no single representative project. To evaluate the burden associated with the revisions to independent consultant safety inspection reports, Commission staff developed separate cost estimates for ''Simple'' and ''Complex'' hydroelectric facilities, which are listed in the tables below. Commission staff recognizes that there are projects with annualized costs less than the ''Simple'' estimate or greater than the ''Complex'' estimate, but Commission staff believes the values presented are appropriately representative when averaged across the total inventory of hydroelectric projects and respondents. The assumption underlying these burden estimates is that one-half of licensed projects can be represented by each category.[125]

148. The Commission received comments on some of the information collection activities proposed for subpart D. A few commenters raised general concerns about the cost estimates provided for independent consultant inspections and reports, suggesting that the Commission's estimates underestimate the costs to small, less complex projects located in Alaska.[126] The Commission recognizes the unique challenges faced by Alaska licensees, but continues to find that the cost estimates provided represent average values that are appropriately representative when averaged across the total inventory of hydroelectric projects and respondents. As described above, the final rule includes several provisions that will allow the project safety inspection requirements to be tailored to the unique needs and safety considerations of individual projects.[127] CEATI comments that the cost for performing a risk analysis can exceed the estimates provided in the NOPR and notes that cost estimates of $83 per hour are not representative of consulting engineers' fees, which can exceed $150 per hour.[128] Commission staff remains confident that the burden and cost estimates presented in the NOPR are representative of the implementation efforts described in the final rule. To date, Commission staff has performed nearly 30 pilot risk analyses alongside licensees. This experience has confirmed that the effort required to complete risk analyses closely aligns with the estimates included in the NOPR and updated in this final rule. We agree with CEATI that the $83 per hour rate is not representative of consulting engineers' fees.[129] In fact, Commission staff's detailed cost breakdowns, which informed the burden and cost estimates for professional services contracting costs (see Table 2 below), used a range of unit rates up to and including $300 per hour for consulting engineers.

149. Some commenters requested that ''generating equipment'' be added to the list of project works excluded from inspections at 18 CFR 12.32. As discussed above, the Commission is not adopting this requested modification because generating equipment is a critical element in the passage and discharge of water through a powerhouse and the failure of such equipment can result in operational and life safety concerns.

150. Some commenters requested further clarity in subpart D to distinguish between the inspection requirements for high hazard potential and low hazard potential project works. Because the inspection requirements for high and low hazard potential project works are discussed in § 12.30, no revisions to 18 CFR 12.32 were made based on this comment.

151. A commenter requested that the Commission reconsider the proposal to revise 18 CFR 12.33 by rescinding all previously approved exemptions from the requirements of subpart D. The final rule does not retain the blanket rescission of all previously approved exemptions and instead provides that the Director of D2SI on a case-by-cases basis may rescind a previously approved exemption for good cause shown. In addition, for future exemption requests, the Director of D2SI may require the licensee to complete a comprehensive assessment prior to considering the exemption request.

[123] *See* 5 CFR 1320.12.

[124] Concurrently with issuance of the NOPR, the Commission issued for public comment the draft chapters of the Engineering Guidelines in Docket Nos. AD20–20–000 (Chapter 15—Supporting Technical Information Document), AD20–21–000 (Chapter 16—Part 12D Program), AD20–22–000 (Chapter 17—Potential Failure Mode Analysis), and AD20–23–000 (Chapter 18—Level 2 Risk Analysis).

[125] The cost data presented in the tables reflect the change in annualized cost based on the changes described in the final rule. The annualized costs are based on the total cost, in 2021 dollars, over the typical 10-year Part 12D inspection cycle, which comprises one Comprehensive Assessment and one Periodic Inspection, and the associated activities. The scope of each inspection and associated reporting requirements are defined in the final rule.

[126] *See* Alaska Power Comments; Cooper Valley Comments; Alaska Electric Comments; *see also* U.S. Senator Lisa Murkowski's November 5, 2020 letter (supporting Alaska Power Association's comments).

[127] *See supra* P 99.

[128] *See* CEATI Comments at 2, 3.

[129] The $83 per hour figure ($87 per hour in 2021 dollars) represents *direct* costs (generally labor costs) associated with licensee staff's performance of efforts related to the changes contemplated in the NOPR and adopted in this final rule. These costs do not include costs for professional services, such as consulting engineers' fees, aside from the costs associated with the licensee's administration and execution of contracts for professional services. Burden and cost estimates for professional services contracting are provided in Table 2.

152. With regard to the revised information collection activities in 18 CFR 12.40, some commenters recommend changing the effective date to 18 months following the date of the final rule, extending the due date for projects not previously inspected under Part 12 from two years to three years, limiting the Regional Engineer's ability to unilaterally change the type of report to be filed, and further clarifying the purpose of the preliminary report. In response to these comments, the final rule revises § 12.40(a)(2) so that the date for a report to be filed under this subpart will be 18 months after the rule's effective date. The final rule does not, however, change the frequency of the required reports. As noted above, Commission staff is confident that two years is sufficient time to complete a comprehensive assessment and a file a report. Any potential benefits of extending this work over a three-year period would be outweighed by the negative impacts that would result if too much time elapses between reviewing the project information, conducting the inspection and performing the Potential Failure Mode Analysis and semi-quantitative risk analysis, and preparing the report.

153. In response to comments, the final rule revises § 12.40(e) to include a required finding of ''good cause'' for the Regional Engineer to change the type of report due.

154. In response to requests for further clarity regarding preliminary reports, the Commission explains above that the preliminary report's purpose is to demonstrate whether the independent consultant team has adequately prepared for their inspection, including the review of background material and instrumentation data. This requirement helps the independent consultant team identify areas in the field that may require additional attention or effort. In the NOPR, the Commission proposed to include information about the preliminary report in § 12.40(f). However, because it covers different material, the final rule relocates the preliminary report requirement to § 12.42, which is a new, standalone section.

2. Subpart F: Owner's Dam Safety Program

155. The addition of 18 CFR part 12, subpart F codifies existing requirements for the preparation or collection of information. As we explained in the NOPR, those licensees who are required to prepare an Owner's Dam Safety Program, due to the hazard potential classification of their licensed project(s), have already done so. When a new license is issued for a non-constructed or previously unlicensed project, the Commission includes a license article requiring an Owner's Dam Safety Program if warranted. There may be situations in which a project's hazard potential classification increases from low to either significant or high (*e.g.,* due to new housing development within the hypothetical inundation area). In that case, if that licensee has no other projects classified as significant or high (*i.e.,* does not have an Owner's Dam Safety Program), then the licensee would be required to prepare a new Owner's Dam Safety Program. However, this is not expected to occur frequently or with any regularity.

156. The Commission received comments on 18 CFR 12.62 (General Requirements for Owner's Dam Safety Program), including:

- Requests to clarify who from the owner's organization should sign the Owner's Dam Safety Program;
- Recommendations to require formal documentation of any agreement delegating the position of Chief Dam Safety Engineer or Chief Dam Safety Coordinator to an individual outside the owner's organization; and
- Statements that the dam safety industry may lack sufficiently qualified individuals to perform the requirements of subpart F.

157. As explained above, because dam owner's organizations vary widely in type and size, from sole proprietorships to corporations to municipalities, it is up to each organization to determine the appropriate signatory for the Owner's Dam Safety Program. As to delegating the role of Chief Dam Safety Engineer or Chief Dam Safety Coordinator to an outside party, the final rule revises § 12.62(d) to require that any such delegation of authority be documented in the Owner's Dam Safety Program. In response to commenters' concerns about a lack of qualified individuals, provisions for developing and implementing an Owner's Dam Safety Program have been in place as guidance for many years and industry has been able to provide adequate resources and training to satisfy the requirements of this section. Moreover, as we explain above, it is crucial that licensees accept responsibility for, and take all reasonable steps to implement, an effective safety program.

158. Other comments on subpart F asked about the difference between a review of an Owner's Dam Safety Program performed during an independent consultant inspection and an independent external audit of the Owner's Dam Safety Program and suggested adding provisions to ensure the independence of the proposed auditor or peer review team.

159. As explained above, the external audit of the Owner's Dam Safety Program, described in 18 CFR 12.65, is distinct from the review of the Owner's Dam Safety Program performed as part of the periodic inspection and comprehensive assessment described in subpart D. Per existing practice, the date of the initial external audit report of the Owner's Dam Safety Program establishes the date of the subsequent five-year audit reports. As explained above, an external audit would generally be more limited in scope and the minimum level of effort compared to the peer review process. A licensee may elect to complete a more detailed peer review performed by a team of at least three reviewers. If necessary, the difference between an independent external audit and a peer review of the Owner's Dam Safety Program will be further clarified in future Commission guidance. The final rule revises § 12.65(b) to include a requirement that the statement of qualifications must demonstrate the independence of the auditor or peer review team from the licensee and its affiliates.

160. The Commission also received comments on 18 CFR 12.64 (Annual Review and Update of the Owner's Dam Safety Program), including:

- A recommendation that the entire section be deleted, since it appears to duplicate other information collection activities;
- A request to clarify whether the annual review of the Owner's Dam Safety Program will take the place of the existing annual internal audit; and
- A request to clarify to which Regional Engineer the Owner's Dam Safety Program should be submitted for owners with dams located in more than one Regional Office's territory.

161. As explained above, the report on the annual review of the Owner's Dam Safety Program should not be conflated with the Owner's Inspection Preparation Form. The Owner's Inspection Preparation Form is an optional form that can be completed by the owner to help their staff prepare for a field inspection; this form is not typically submitted to the Commission. Clarification of the annual review process and how Owner's Dam Safety Programs should be filed for owners with dams in multiple Regional Offices will be provided in future Commission guidance.

162. As stated above, subpart F codifies previous existing requirements for the preparation or collection of Owner's Dam Safety Program

information. Licensees who are required to prepare an Owner's Dam Safety Program, due to the hazard potential classification of their licensed project(s), have already done so. For this reason, we estimated in the NOPR that no incremental burden or cost would result from the proposed addition of subpart F.

163. However, for informational purposes, this final rule now provides burden and cost estimates for the information collection activities associated with the Owner's Dam Safety Program. The Commission recognizes that licensee dam safety programs vary widely from large utilities with tens or hundreds of dams to small programs with only a single dam. Therefore, to evaluate the burden and cost estimates for the Owner's Dam Safety Program and to capture differences between large and small programs, Commission staff developed separate estimates for ''Small Programs'' and ''Large Programs,'' reflected in Tables 1 through 3 below. The ''Small Programs'' category is intended to represent licensees with smaller dam safety programs based on the number of dams in their inventory (*i.e.,* less than three high or significant hazard potential dams). The Commission estimates that approximately 80% of licensee dam safety programs are considered Small Programs.

3. Subpart B: Reports and Records

164. The minor revisions to 18 CFR part 12, subpart B require licensees to report the rescue of any person that occurs at hydroelectric facilities, which is in addition to the previous requirements that licensees report public safety incidents that result in the death or serious injury of any person.

165. With respect to changes to subpart B's information collection requirements, the Commission received the following comments on 18 CFR 12.10:

- A suggestion that a threshold for reporting rescues and serious injuries should be established by excluding minor incidents not requiring treatment at a medical facility; and
- A request to clarify the reporting requirements for safety related incidents, including those related to changes in water levels or flows.

166. In response to the suggestion regarding a threshold for reporting rescues and serious injuries, the final rule adds new § 12.10(b)(4) to clarify that a serious injury includes any injury that results in treatment at a medical facility or an on-site response by licensee staff or another trained professional.

167. To clarify the reporting of safety-related incidents, the Commission explains that § 12.10(b)(1) provides that an initial report must be made promptly following any drowning or other incident resulting in death, serious injury, or rescue that occurs at the project works or involves project operations. The initial report can be made by email or telephone. This is a change from the initial written reporting requirements included in the NOPR. For consistency, the final rule applies this same change to the reporting requirements for initial reports of conditions affecting the safety of a project or its works, found in § 12.10(a) to make clear that initial reports can be made by email or telephone. Section 12.10(b)(2) provides the requirements for written reports by outlining three categories of incidents and indicating whether a written report is required: (i) Any death, serious injury, or rescue that is considered or alleged to be project-related (written report required); (ii) any death that is not project-related (copy of media article or law enforcement report accepted); and (iii) any serious injury or rescue that is not project-related (no written report required). The revisions to § 12.10(b) should clarify the reporting requirements for each type of incident. In addition, the final rule deletes § 12.10(b)(3) from the NOPR as it provided an outdated form of hard copy submittal (newspaper clipping). The final rule also revises § 12.10(b)(3)(iii) to include in the definition of ''project-related,'' any deaths, serious injuries, or rescues that ''involve of a licensee employee, contractor, or other person performing work at a licensed project facility and are related in whole or in part to the work being performed.''

4. Engineering Guidelines

168. The Commission also received comments on the four draft chapters of the Engineering Guidelines (Chapters 15–18) that were issued concurrently with the NOPR. Some of these comments were similar to those received on the NOPR and have been addressed above (*e.g.,* additional cost and effort related to new requirements for preparing preliminary reports, conducting a comprehensive assessment review meeting, and reviewing and providing supplemental record analyses included in draft Chapter 16 of the Engineering Guidelines). A few commenters stated that the scope of the Potential Failure Mode Analysis in draft Chapter 17 of the Engineering Guidelines is too encompassing and the risk analysis process described in draft Chapter 18 of the Engineering Guidelines goes beyond what should be required for a risk analysis at this level of study and that both will increase costs for licensees.

169. Regarding the scope of the Potential Failure Mode Analysis, the Commission carefully evaluated specific weaknesses in the current Potential Failure Mode Analysis process identified by the Oroville Forensic Team and their recommendations for improvements to the process.[130] The improvements to the Potential Failure Mode Analysis process, described in Chapter 17 of the Engineering Guidelines, are necessary to reduce identified shortcomings in the existing process and to provide a comprehensive and systematic approach to identifying and evaluating potential failure modes to discover and mitigate future dam safety concerns and incidents.

170. In response to the comment that the risk analysis process described in Chapter 18 of the Engineering Guidelines goes beyond what should be required for a risk analysis at this level, the Commission has reviewed risk analysis approaches and procedures used by other federal agencies for conducting risk analysis for similar levels of studies. The Commission has modeled the scope and detail of the Level 2 risk analysis process in Chapter 18 of the Engineering Guidelines after the Corps and Reclamation's semi-quantitative risk analysis process documented in their *Best Practices in Dam and Levee Safety Risk Analysis* document.[131] The scope and detail of the Level 2 risk analysis process also closely follows the periodic risk analysis described in FEMA's *Federal Guidelines for Dam Safety Risk Management.*[132]

5. Annual Burden and Cost Estimates

171. The Commission has considered all comments on the NOPR and the four draft chapters of the Engineering Guidelines in estimating the incremental burden and cost associated with the revised regulations adopted in this final rule. Aside from adding the burden and cost estimates associated with subpart F's Owner's Dam Safety Program for informational purposes and updating the cost estimates to reflect 2021 dollars, no revisions were made to the burden and cost estimates provided in the NOPR.

[130] *See supra* note 14.

[131] Reclamation and the Corps, *Chapter A–04 Semi-Quantitative Risk Analysis, Best Practices in Dam and Levee Safety Risk Analysis* (July 2019). *https://www.iwrlibrary.us/#/series/Best%20Practices-Manual.*

[132] *See supra* note 24.

172. Table 1 itemizes the estimated annual burden [133] and direct cost [134] of the changes resulting from this final rule. Record keeping requirements are included in the burden and cost estimates for the development and collection of the data and reports. The final rule's direct cost estimates have been updated to reflect 2021 dollars.

TABLE 1—ANNUAL BURDEN AND DIRECT COST CHANGES RESULTING FROM THE FINAL RULE IN DOCKET NO. RM20–9–000 [135]

Type of respondent	Type of response	Number of respondents	Average number of annual responses per respondent	Average annual burden hours and cost per response	Total number of annual responses (Col. C × Col. D)	Total annual burden hours and cost (Col. E × Col. F)
A.	B.	C.	D.	E.	F.	G.
Applicant [136] or Licensee [137]	Reports of Project-Related Deaths, Serious Injuries, or Rescues [138].	[139] 65	[140] 2.14	2 hrs.; $174	139	278 hrs.; $24,186.
Licensee of Simple Hydro Facility [141].	Ind. Cons. Team Proposals and Reports on PIs and CAs [142].	[143] 375	[144] 0.1	0 hrs.; $0	37.5	0 hrs.; $0.
Licensee of Complex Hydro Facility.	Ind. Cons. Team Proposals and Reports on PIs and CAs [145].	375	0.1	[146] 0.6 hrs.; $52.20.	37.5	22.5 hrs.; $1,957.50.
Licensee	Exemption Requests [147]	10	1	2 hrs.; $174	10	20 hrs.; $1,740.
Licensee of a Small Program [148] with a High or Significant Hazard Potential Dam or Other Project Work.	Owner's Dam Safety Program (ODSP) Document.	[149] 180	[150] 0.2	[151] 60 hrs.; $5,220.	36	2160 hrs.; $187,920.

[133] ''Burden'' is the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. For further explanation of what is included in the information collection burden, refer to Title 5 Code of Federal Regulations 1320.3.

[134] Direct costs are those costs (generally labor costs) associated with the applicant's or licensee's staff in the performance of the efforts related to the final rule. These do not include the costs for professional services, although the direct costs do include the costs associated with the applicant's or licensee's administration and execution of contracts for professional services.

[135] Commission staff believes that, in terms of cost for wages and benefits, industry is similarly situated to Commission staff. Therefore, we are using the FERC 2021 average cost (for wages plus benefits) for one FERC full-time equivalent (FTE) of $180,703 (or $87.00 per hour). We note that the NOPR provided cost estimates in 2020 dollars.

[136] As defined by 18 CFR 12.1(a)(2).

[137] As defined by 18 CFR 12.1(a)(1) and (a)(3).

[138] Revisions of 18 CFR 12.10(b)(1), 12.10(b)(2), and 12.10(b)(4) for written reports of project-related deaths, serious injuries, or rescues at project works or involving project operations.

[139] Commission staff assumes the average number of respondents who will file a 12.10(b) public safety incident report documenting a rescue at a hydroelectric project will equal the average number of respondents who filed a 12.10(b) public safety incident report documenting a death or serious injury over the 10-year period from January 1, 2009 through December 31, 2018.

[140] Commission staff assumes the average number of 12.10(b) public safety incident reports documenting rescues at hydroelectric projects will equal the average number of 12.10(b) reports for deaths and serious injuries over the 10-year period from January 1, 2009 through December 31, 2018.

[141] Commission staff estimates no incremental change in direct costs due to the final rule change as compared to the current burden and costs.

[142] Includes direct costs associated with the preparation and submittal of Independent Consultant Team Proposals (18 CFR 12.34) and Reports for Periodic Inspections and Comprehensive Assessments (18 CFR 12.36 and 12.38).

[143] Approximately 750 project developments licensed by the Commission will be subject to the reporting requirement changes resulting from this final rule. This table defines a single response as the consolidated filings associated with the typical 10-year cycle for Independent Consultant's Safety Inspections, which would take effect following implementation of a final rule. A single response includes one each of the reports and other filings required under the scope of a Periodic Inspection and a Comprehensive Assessment. Thus, the total number of responses over a 10-year period will be the number of projects (750), divided equally between the ''Simple'' and ''Complex'' categories of hydroelectric facilities.

[144] As previously noted, this table defines a single response as the consolidated filings associated with the typical 10-year cycle for Independent Consultant's Safety Inspections. Therefore, the number of annual responses is averaged over the 10-year period, or 0.1 responses on average per year.

[145] *See supra* note 141.

[146] Burden costs include hourly wages estimated based on complexity of project, scope of inspection, experience and number of assigned staff, and were compared to industry estimates provided by fewer than nine industry representatives who were contacted by Commission staff.

[147] 18 CFR 12.33(a) includes a provision for licensees to submit a written request to be excluded from the requirements of Subpart D.

[148] A small program is a licensee with less than three high or significant hazard potential dams or other project works.

[149] Commission staff assumes the number of respondents who will file an Owner's Dam Safety Program document will equal the number of respondents who filed an original Owner's Dam Safety Program document over the period from January 1, 2013, through December 31, 2019. Commission staff estimates that 80% of the respondents are from small programs. Thus, the total number of responses (225) times 0.8 is the number of responses from licensees from small programs.

[150] The number of annual responses is averaged over the five-year period, or 0.2 responses on average per year.

[151] Burden costs include hourly wages estimated based on complexity of project, size of program, and scope based on Commission staff estimate.

[152] A large program is a licensee with three or more high or significant hazard potential dams or other project works.

[153] Commission staff assumes the number of respondents who will file an Owner's Dam Safety Program document will equal the number of respondents who filed an original Owner's Dam Safety Program document over the period from January 1, 2013, through December 31, 2019. Commission staff estimates that 20% of the respondents are from large programs. Thus, the total number of responses (225) times 0.2 is the number of responses from licensees from large programs.

[154] *See supra* note 149.

[155] *See supra* note 150.

[156] Commission staff assumes the number of respondents who will file an Owner's Dam Safety Program document will equal the number of respondents that filed an original Owner's Dam Safety Program document over the period from January 1, 2013, through December 31, 2019.

[157] Commission staff assumes the number of respondents who will file an Owner's Dam Safety statement of qualification for external audit or peer review will equal the total number of respondents that filed an original statement of qualification for external audit or peer review over the period from January 1, 2013, through December 31, 2019.

[158] *See supra* note 149.

[159] Commission staff assumes the number of respondents that will file an Owner's Dam Safety report of external audit or peer review will equal the number of respondents that filed an original Owner's Dam Safety Program report of external audit or peer review over the period from January 1, 2013, through December 31, 2019. Commission staff estimates that 80% of the respondents are from small programs. Thus, the total number of responses (225) times 0.8 is the number of responses from licensees from small programs.

[160] Commission staff assumes the number of respondents that will file an Owner's Dam Safety report of external audit or peer review will equal the number of respondents that filed an original Owner's Dam Safety Program report of external audit or peer review over the period from January 1, 2013, through December 31, 2019. Commission staff estimates that 20% of the respondents are from large programs. Thus, the total number of responses (225) times 0.2 is the number of responses from licensees from large programs.

[161] Commission staff assumes the average number of respondents that will file a request for an extension of time to file an Owner's Dam Safety Program submittal will equal the average number of respondents that filed such a request from January 1, 2013, through December 31, 2019.

TABLE 1—ANNUAL BURDEN AND DIRECT COST CHANGES RESULTING FROM THE FINAL RULE—Continued IN DOCKET NO. RM20–9–000 [135]

Type of respondent	Type of response	Number of respondents	Average number of annual responses per respondent	Average annual burden hours and cost per response	Total number of annual responses (Col. C × Col. D)	Total annual burden hours and cost (Col. E × Col. F)
A.	B.	C.	D.	E.	F.	G.
Licensee of a Large Program [152] with a High or Significant Hazard Potential Dam or Other Project Work.	ODSP Document	[153] 45	[154] 0.2	[155] 120 hrs.; $10,440.	9	1080 hrs.; $93,960.
Licensee with a High or Significant Hazard Potential Dam or Other Project Work.	ODSP Document Revisions	[156] 225	1	6 hrs.; $522	225	1350 hrs.; $117,450.
Licensee with a High or Significant Hazard Potential Dam or Other Project Work.	ODSP External Audit or Peer Review Qualification Statement.	[157] 225	[158] 0.2	2 hrs.; $174	45	90 hrs.; $7,830.
Licensee of Small Program with a High or Significant Hazard Potential Dam or Other Project Work.	ODSP External Audits or Peer Review Report.	[159] 180	0.2	2 hrs.; $174	36	72 hrs.; $6,264.
Licensee of Large Program with a High or Significant Hazard Potential Dam or Other Project Work.	ODSP External Audits or Peer Review Report.	[160] 45	0.2	2 hrs.; $174	9	18 hrs.; $1,566.
Licensee with a High or Significant Hazard Potential Dam or Other Project Work.	ODSP Extension of Time Request.	[161] 5	1	4 hrs.; $348	5	20 hrs.; $1,740.
Totals		1,730			589	5,110.5 hrs.; $444,613.50.

173. Table 2 itemizes the estimated annual burden and annual contracting costs for professional services [162] of the information collections that are affected by this final rule. Record keeping requirements are included in the burden and cost estimates for the development and collection of the data and reports. The final rule's cost estimates for professional services have been updated to reflect 2021 dollars.

[162] Contracting costs include costs for professional services, including labor, travel and subsistence, and other indirect costs incurred by the contractor or consultant. Contracting costs do not include direct costs incurred by the applicant or licensee in the administration or execution of the contract for professional services; those are included in the previous table, as applicable.

[163] As defined by 18 CFR 12.1(a)(2).

[164] As defined by 18 CFR 12.1(a)(1) and (a)(3).

[165] Revisions of 18 CFR 12.10(b)(1), (b)(2), and (b)(4) for written reports of project-related deaths, serious injuries, or rescues at project works or involving project operations.

[166] Includes contracting costs for professional services associated with the preparation and submittal of Independent Consultant Team Proposals (18 CFR 12.34) and Reports for Periodic Inspections and Comprehensive Assessments (18 CFR 12.36 and 12.38).

[167] Approximately 750 project developments licensed by the Commission will be subject to the reporting requirement changes resulting from this final rule. This table defines a single response as the consolidated filings associated with the typical 10-year cycle for Independent Consultant's Safety Inspections, which would take effect following implementation of a final rule. A single response includes one each of the reports and other filings required under the scope of a Periodic Inspection and a Comprehensive Assessment. Thus, the total number of responses over a 10-year period will be the number of projects (750), divided equally between the ''Simple'' and ''Complex'' categories of hydroelectric facilities.

[168] As previously noted, this table defines a single response as the consolidated filings associated with the typical 10-year cycle for Independent Consultant's Safety Inspections. Therefore, the number of annual responses is averaged over the 10-year period, or 0.1 responses on average per year.

[169] Burden costs include hourly wages estimated based on complexity of project, scope of inspection, experience and number of assigned staff, and were compared to industry estimates provided by fewer than nine industry representatives. 2020 cost information escalated by five percent to 2021 costs.

[170] *See supra* note 165.

[171] *See supra* note 168.

[172] 18 CFR 12.33(a) includes a provision for licensees to submit a written request to be excluded from the requirements of subpart D.

[173] Commission staff assumes the number of respondents that will file an Owner's Dam Safety Program statement of qualification for external audit or peer review will equal the number of respondents that filed an original statement of qualification for external audit or peer review over the period from January 1, 2013, through December 31, 2019.

[174] The number of annual responses is averaged over the five-year period, or 0.2 responses on average per year.

[175] Commission staff assumes the number of respondents that will file an Owner's Dam Safety report of audit or peer review will equal the number of respondents who filed an original Owner's Dam Safety Program report of audit or peer review over the period from January 1, 2013, through December 31, 2019. Commission staff estimates that 80% of the respondents are from small programs. Thus, the total number of responses (225) times 0.8 is the number of responses from licensees from small programs.

[176] Burden costs include hourly wages estimated based on complexity of project, size of program, and scope based on Commission staff estimate.

[177] Commission staff assumes the number of respondents who will file an Owner's Dam Safety report of external audit or peer review will equal the number of respondents that filed an original Owner's Dam Safety Program report of external audit or peer review over the period from January 1, 2013, through December 31, 2019. Commission staff estimates that 20% of the respondents are from large programs. Thus, the total number of responses (225) times 0.2 is the number of responses from licensees from large programs.

TABLE 2—ANNUAL BURDEN AND CONTRACTING COST FOR PROFESSIONAL SERVICES CHANGES RESULTING FROM THE FINAL RULE IN DOCKET NO. RM20–9–000

Type of respondent	Type of response	Number of respondents	Average number of annual responses per respondent	Average annual burden hours and cost per response	Total number of annual responses (Col. C × Col. D)	Total annual burden hours and cost (Col. E × Col. F)
A.	B.	C.	D.	E.	F.	G.
Applicant [163] or Licensee [164]	Reports of Project-Related Deaths, Serious Injuries, or Rescues [165].	There are no anticipated costs for contracted professional services affected by this final rule.				
Licensee of Simple Hydro Facility	Ind. Cons. Team Proposals and Reports on PIs and CAs [166].	[167] 375	[168] 0.1	12 hrs.; [169] $2,651.	37.5	450 hrs.; $99,412.50.
Licensee of Complex Hydro Facility.	Ind. Cons. Team Proposals and Reports on PIs and CAs [170].	375	0.1	32 hrs.; [171] $7,329.	37.5	1,200 hrs.; $274,837.50.
Licensee	Exemption Requests [172]	There are no anticipated costs for contracted professional services affected by this final rule.				
Licensee of a Small Program with a High or Significant Hazard Potential Dam or Other Project Work.	ODSP Document	There are no anticipated costs for contracted professional services affected by this final rule change.				
Licensee of a Large Program with a High or Significant Hazard Potential Dam or Other Project Work.	ODSP Document	There are no anticipated costs for contracted professional services affected by this final rule change.				
Licensee with a High or Significant Hazard Potential Dam or Other Project Work.	ODSP Document Revisions	There are no anticipated costs for contracted professional services affected by this final rule change.				
Licensee with a High or Significant Hazard Potential Dam or Other Project Work.	ODSP External Audit or Peer Review Qualification Statement.	[173] 225	[174] 0.2	6 hrs; $522	45	270 hrs; $23,490.
Licensee of a Small Program with a High or Significant Hazard Potential Dam or Other Project Work.	ODSP External Audit or Peer Review Report.	[175] 180	0.2	60 [176] hrs; $15,750.	36	2160 hrs; $567,000.
Licensee of a Large Program with a High or Significant Hazard Potential Dam or Other Project Work.	ODSP External Audits or Peer Review Report.	[177] 45	0.2	240 hrs; $75,600.	9	2160 hrs; $680,400.
Licensee with a High or Significant Hazard Potential Dam or Other Project Work.	ODSP Extension of Time Request.	There are no anticipated costs for contracted professional services affected by this final rule change.				
Totals		1200			165	6,240 hrs.; $1,645,140

174. Table 3 itemizes the estimated annual burden and total cost (direct costs [from Table 1] and costs for contracted professional services [from Table 2]), of the changes due to this final rule. Record keeping requirements are included in the burden and cost estimates for the development and collection of the data and reports.

TABLE 3—TOTAL ANNUAL BURDEN AND COST CHANGES RESULTING FROM THE FINAL RULE IN DOCKET NO. RM20–9–000

Type of respondent	Type of response	Number of respondents	Average number of annual responses per respondent	Average annual burden hours and cost per response	Total number of annual responses (Col. C × Col. D)	Total annual burden hours and cost (Col. E × Col. F)
A.	B.	C.	D.	E.	F.	G.
Applicant [178] or Licensee [179]	Reports of Project-Related Deaths, Serious Injuries, or Rescues [180].	65	2.14	2 hrs.; $174	139	278 hrs.; $24,186.
Licensee of Simple Hydro Facility [181].	Ind. Cons. Team Proposals and Reports on PIs and CAs [182].	375	0.1	12 hrs.; $2,651	37.5	450 hrs.; $99,412.50.
Licensee of Complex Hydro Facility [183].	Ind. Cons. Team Proposals and Reports on PIs and CAs.	375	0.1	32.6 hrs.; $7,381.20.	37.5	1,222.5 hrs.; $276,795.
Licensee	Exemption Requests [184]	10	1	2 hrs.; $174	10	20 hrs.; $1,740.

[178] As defined by 18 CFR 12.1(a)(2).

[179] As defined by 18 CFR 12.1(a)(1) and (a)(3).

[180] Revisions of 18 CFR 12.10(b)(1), (b)(2), and (b)(4) for written reports of project-related deaths, serious injuries, or rescues at project works or involving project operations.

[181] Includes direct and contracting burden and cost.

[182] Includes direct costs associated with the preparation and submittal of Independent Consultant Team Proposals (18 CFR 12.34) and Reports for Periodic Inspections and Comprehensive Assessments (18 CFR 12.36 and 12.38).

[183] Includes direct and contracting burden and cost.

[184] 18 CFR 12.33(a) includes a provision for Licensees to submit a written request to be excluded from the requirements of subpart D.

[185] Includes direct and contracting burden and cost.

[186] Includes direct and contracting burden and cost.

[187] Includes direct and contracting burden and cost.

TABLE 3—TOTAL ANNUAL BURDEN AND COST CHANGES RESULTING FROM THE FINAL RULE IN DOCKET NO. RM20–9–000—Continued

Type of respondent	Type of response	Number of respondents	Average number of annual responses per respondent	Average annual burden hours and cost per response	Total number of annual responses (Col. C × Col. D)	Total annual burden hours and cost (Col. E × Col. F)
A.	B.	C.	D.	E.	F.	G.
Licensee of a Small Program with a High or Significant Hazard Potential Dam or Other Project Work.	ODSP Document	180	0.2	60 hrs.; $5,220	36	2160 hrs.; $187,920.
Licensee of a Large Program with a High or Significant Hazard Potential Dam or Other Project Work.	ODSP Document	45	0.2	120 hrs.; $10,440.	9	1080 hrs.; $93,960.
Licensee with a High or Significant Hazard Potential Dam or Other Project Work.	ODSP Document Revisions	225	1	6 hrs.; $522	225	1350 hrs.; $117,450.
Licensee with a High or Significant Hazard Potential Dam or Other Project Work [185].	ODSP External Audit or Peer Review Qualification Statement.	225	0.2	8 hrs.; $696	45	360 hrs; $31,320.
Licensee of a Small Program with a High or Significant Hazard Potential Dam or Other Project Work [186].	ODSP External Audits or Peer Review Report.	180	0.2	62 hrs.; $15,924	36	2232 hrs.; $573,264.
Licensee of a Large Program with a High or Significant Hazard Potential Dam or Other Project Work [187].	ODSP External Audit or Peer Review Report.	45	0.2	242 hrs.; $75,774.	9	2178 hrs.; $681,966.
Licensee with a High or Significant Hazard Potential Dam or Other Project Work.	ODSP Extension of Time Request.	5	1	4 hrs.; $348	5	20 hrs.; $1,740.
Total Direct Costs & Contracting Costs due to Final Rule in RM20–9–000 & AD20–20, –21, –22, & –23.		1730			589	11,350.5 hrs.; $2,089,753.50.

175. *Title:* FERC–517, Safety of Water Power Projects and Project Works.

176. *Action:* Revision to the scope of independent consultant safety inspections and reports, codification of the Owner's Dam Safety Program, and addition of reporting requirements related to public safety incidents at hydroelectric projects.

177. *OMB Control No.:* 1902–TBD.

178. *Respondents:* Hydroelectric licensees (and applicants, as applicable), including municipalities, businesses, private citizens, and for-profit and not-for-profit institutions.

179. *Frequency of Information:* On occasion, except for reports on periodic inspections and comprehensive assessment, which must be submitted under 18 CFR 12.40:

- For any project that was inspected in accordance with 18 CFR part 12 prior to January 1, 2022, a periodic inspection or comprehensive assessment must be completed, and a report on it filed, within five years of the due date of the most recent report. In addition, the first comprehensive assessment must be completed, and the report on it filed, by December 31, 2038.
- A licensed project development is subject to a different set of deadlines if the development was not inspected in accordance with 18 CFR part 12 prior to January 1, 2022, under the Commission's rules in effect on January 1, 2020. In these circumstances, the first comprehensive assessment and the report on it are due:
  - Not later than two years after the date of issuance of the order licensing a development or amending a license to include that development, if the development meets the criteria specified in §§ 12.30(a)(1) or 12.30(a)(2), and was constructed before the date of issuance of such order.
  - Not later than five years after the date of issuance of the order licensing that development, or amending a license to include that development, if the development was constructed after the date of issuance of such order.
  - No later than two years after a date specified by the Regional Engineer, for other developments that were not inspected prior to January 1, 2022, under the Commission's rules in effect on January 1, 2020.

180. *Necessity of Information:* The revisions in this final rule are necessary to enhance the ability of Commission staff to protect the safety of dams and the public; to reduce the risk to life, health, and property associated with hydroelectric projects; and to comply with guidance from FEMA's Interagency Committee on Dam Safety.

181. *Internal Review:* The Commission has reviewed the revisions and has determined that they are necessary. These requirements conform to the Commission's need for efficient information collection, communication, and management within the energy industry. The Commission has specific, objective support for the burden estimates associated with the information collection requirements.[188]

182. Interested persons may obtain information on the reporting requirements by contacting the Federal Energy Regulatory Commission at one of the following methods:

- *USPS:* Federal Energy Regulatory Commission, Ellen Brown, Office of the Executive Director, 888 First Street NE, Washington, DC 20426.
- *Hard copy communication other than USPS:* Federal Energy Regulatory Commission, Ellen Brown, Office of the Executive Director, 12225 Wilkins Avenue, Rockville, Maryland 20852.
- *Email: DataClearance@ferc.gov.*
- *Phone:* (202) 502–8663, or by fax: (202) 273–0873.

183. Please send comments concerning the collection of information and the associated burden estimates to: Office of Information and Regulatory Affairs, Office of Management and Budget [Attention: Federal Energy Regulatory Commission Desk Officer]. Due to security concerns, comments should be sent directly to

[188] Commission staff contacted fewer than nine parties to obtain supporting information in order to benchmark burden estimates.

www.reginfo.gov/public/do/PRAMain. Comments submitted to OMB should be sent within 30 days of publication of this notice in the **Federal Register** and refer to FERC–517 and OMB Control No. 1902–TBD.

B. Environmental Analysis

184. The Commission is required to prepare an environmental assessment or an environmental impact statement for any action that may have a significant effect on the human environment.[189] Excluded from this requirement are rules that are clarifying, corrective, or procedural, or that do not substantially change the effect of legislation or the regulations being amended.[190] This final rule revises the Commission's dam safety regulations by incorporating a two-tier structure for independent consultant safety inspections, codifying guidance requiring licensees to develop an owner's dam safety program and a public safety plan; expanding the scope of public safety incident reporting; and incorporating various minor revisions. Because this final rule does not substantially change the effect of the Commission's part 12 regulations, preparation of an environmental assessment or environmental impact statement is not required.

C. Regulatory Flexibility Act

185. The Regulatory Flexibility Act of 1980 (RFA) [191] generally requires a description and analysis of final rules that will have significant economic impact on a substantial number of small entities. The RFA mandates consideration of regulatory alternatives that accomplish the stated objectives of a final rule and minimize any significant economic impact on a substantial number of small entities.[192] In lieu of preparing a regulatory flexibility analysis, an agency may certify that a final rule will not have a significant economic impact on a substantial number of small entities.[193]

186. The Small Business Administration's (SBA) Office of Size Standards develops the numerical definition of a small business.[194] The SBA size standard for electric utilities is based on the number of employees, including affiliates.[195] Under SBA's current size standards, a hydroelectric power generator (NAICS code 221111) [196] is small if, including its affiliates, it employs 500 or fewer people.[197]

187. The final rule's revisions to part 12, subpart D would directly affect all licensees that are currently required to file independent consultant safety inspection reports. Since the number of licensed projects per respondent varies from one to more than 50, the number of respondents does not correlate directly to the number of responses. Based on data over the preceding 10-year-period, Commission staff estimated the expected number of responses from entities that qualify as small. In total, approximately 132 entities qualify as small and would be expected to file approximately 225 responses (30%) with the Commission over the 10-year cycle. The remaining 525 responses (70%) would be filed by 106 entities that do not qualify as small.

188. The Commission notes that the projects owned by entities that qualify as small entities are typically smaller and/or less complex than those owned by large entities. Thus, the annual incremental cost to small entities would likely skew towards the ''Simple Hydroelectric Facility'' category presented in the burden estimates provided above in the Information Collection Statement section.[198] In addition, this final rule incorporates provisions that grant Commission staff the authority, upon demonstration by the licensee and Commission review and acceptance of appropriate justification, to waive or reduce the scope of specific components of an independent consultant safety inspection (*e.g.,* waiving the requirement to perform a Potential Failure Mode Analysis or risk analysis) or to change the type of inspection report (*e.g.,* by allowing an inspection scheduled as a comprehensive assessment to be performed instead as a periodic inspection). The Commission has included these provisions to focus effort on those projects that present greater risk to life, health, and property, and to alleviate the potential economic impact on licensees of simple projects that present less risk. Since the burden estimates include all components of an independent consultant safety inspection, utilization of these provisions may result in a lower incremental cost for small entities.

189. The addition of part 12, subpart F, which codifies the Owner's Dam Safety Program, would apply only to entities that are responsible for one or more projects classified as having a high hazard potential. The Commission expects the Owner's Dam Safety Program to improve communication and understanding within licensee organizations as to their responsibilities for ensuring dam safety and protection of the public, and may contribute to an increased likelihood that preventable dam safety issues are caught and addressed before they present an imminent danger to life safety or property. Because those licensees required to prepare an Owner's Dam Safety Program due to their project's hazard potential classification have already done so,[199] the Commission does not anticipate that the addition of subpart F will be unduly burdensome on licensees, regardless of their status as a small or large entity.

190. With respect to the filing of public safety incidents involving the rescue of any person at a hydroelectric facility, the Commission estimates that most affected entities qualify as small entities. But, as reflected in the burden and cost estimates provided above, the Commission expects an additional two burden hours (and corresponding $166, an amount that would not be considered significant) for licensees or applicants, regardless of their status as small or large.

191. While the revisions to subpart D may have some increased economic impact on a limited number of small entities, these improvements to the independent consultant safety inspection process are necessary, and the associated costs justified, by the Commission's Congressionally-mandated mission to ensure the protection of life, health, and property from risks associated with licensed hydroelectric facilities. In addition, the revisions to subpart D are intended to help prevent future dam safety incidents that could potentially result in significant economic impacts on small entities (*e.g.,* financial costs associated with causing life loss or property damage, major project repairs, lost revenue due to the inability to operate the project, etc.).

192. In summary, based on the estimated costs included in Table 3 above, the estimated economic impacts on small entities as a result of the final

[189] *Regulations Implementing the National Environmental Policy Act of 1969,* Order No. 486, 52 FR 47897 (Dec. 17, 1987), FERC Stats. & Regs. ¶ 30,783 (1987) (cross-referenced at 41 FERC ¶ 61,284).

[190] 18 CFR 380.4(a)(2)(ii) (2021).

[191] 5 U.S.C. 601–612.

[192] *Id.* 603(c).

[193] *Id.* 605(b).

[194] 13 CFR 121.101 (2021).

[195] *Id.* 121.201.

[196] The North American Industry Classification System (NAICS) is an industry classification system that Federal statistical agencies use to categorize businesses for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. economy. United States Census Bureau, *North American Industry Classification System, https://www.census.gov/eos/www/naics/.*

[197] 13 CFR 121.201 (Sector 22—Utilities).

[198] *See* discussion and accompanying tables *supra* Part V.A.

[199] *See supra* P 155.

rule could range from approximately $174 (for the submittal of a one-time request for an exemption from part 12, subpart D) to over $7,380 per year for each complex project. A representative cost for a typical small entity with one or more simple projects would be approximately $2,650 per year per project subject to part 12, subpart D.[200] Commission staff estimates that over 80% of the small entities have two or fewer projects subject to subpart D. The above estimates do not include the burden and cost associated with the Owner's Dam Safety Program as those licensees required to prepare an Owner's Dam Safety Program have already done so. Generally, however, the estimated costs associated with the Owner's Dam Safety Program for small entities could range from approximately $3,850 per year for a small program to approximately $15,825 per year for a large program. Commission staff estimates that ninety percent of the small entities have small programs.

193. Accordingly, pursuant to section 605(b) of the RFA, the Commission certifies that this final rule will not have a significant economic impact on a substantial number of small entities.

D. Document Availability

194. In addition to publishing the full text of this document in the **Federal Register**, the Commission provides all interested persons an opportunity to view and print the contents of this document via the internet through the Commission's Home Page (*http://www.ferc.gov*). At this time, the Commission has suspended access to the Commission's Public Reference Room due to the President's March 13, 2020 proclamation declaring a National Emergency concerning the Novel Coronavirus Disease (COVID–19).

195. From the Commission's Home Page on the internet, this information is available on eLibrary. The full text of this document is available on eLibrary in PDF and Microsoft Word format for viewing, printing, and/or downloading. To access this document in eLibrary, type the docket number excluding the last three digits of this document in the docket number field.

196. User assistance is available for eLibrary and the Commission's website during normal business hours from the Commission's Online Support at (202) 502–6652 (toll free at 1–866–208–3676) or email at *ferconlinesupport@ferc.gov,* or the Public Reference Room at (202) 502–8371, TTY (202) 502–8659. Email the Public Reference Room at *public.referenceroom@ferc.gov.*

E. Effective Date and Congressional Notification

197. These regulations are effective April 11, 2022. The Commission has determined, with the concurrence of the Administrator of the Office of Information and Regulatory Affairs of OMB, that this rule is not a major rule as defined in section 251 of the Small Business Regulatory Enforcement Fairness Act of 1996.[201] This rule is being submitted to the Senate, House, Government Accountability Office, and Small Business Administration.

List of Subjects in 18 CFR Part 12

Electric power, Reporting and recordkeeping requirements, Safety.

By direction of the Commission. Commissioner Phillips is not participating.

Issued: December 16, 2021.

Debbie-Anne A. Reese,

Deputy Secretary.

In consideration of the foregoing, the Federal Energy Regulatory Commission amends part 12, chapter I, title 18, Code of Federal Regulations, as follows:

PART 12—SAFETY OF WATER POWER PROJECTS AND PROJECT WORKS

■ 1. The authority citation for part 12 is revised to read as follows:

Authority: 16 U.S.C. 791a-825r; 42 U.S.C. 7101–7352.

Subpart A—General Provisions

■ 2. Amend § 12.3 by:
■ a. Revising paragraphs (b)(3), (b)(4) introductory text, and (b)(4)(ii), (v), and (xi);
■ b. Redesignating paragraph (b)(4)(xiii) as (b)(4)(xix);
■ c. Adding a new paragraph (b)(4)(xiii);
■ d. Redesignating paragraph (b)(11) as (b)(14);
■ e. Adding new paragraph (b)(11), (12) and (13).

The revisions and additions read as follows:

§ 12.3 Definitions.

* * * * *

(b) * * *

(3) *Authorized Commission representative* means the Director of the Office of Energy Projects, the Director of the Division of Dam Safety and Inspections, the Regional Engineer, or any other member of the Commission staff whom the Commission may specifically designate.

(4) *Condition affecting the safety of a project or project works* means any condition, event, or action at the project which might compromise the safety, stability, or integrity of any project work or the ability of any project work to function safely for its intended purposes, including navigation, water power development, or other beneficial public uses, including recreation; or which might otherwise adversely affect life, health, or property. Conditions affecting the safety of a project or project works include, but are not limited to:

* * * * *

(ii) Failure of, misoperation of, or failure to operate when attempted any facility that controls the release or storage of impounded water, such as a gate or a valve;

* * * * *

(v) Internal erosion, piping, slides, or settlements of materials in any dam, foundation, abutment, dike, or embankment;

* * * * *

(xi) Security incidents (physical and/or cyber);

* * * * *

(xiii) Overtopping of any dam, abutment, or water conveyance;

* * * * *

(11) *Water conveyance* means any canal, penstock, tunnel, flowline, flume, siphon, or other project work, constructed or natural, which facilitates the movement of water for the generation of hydropower, environmental benefit, or other purpose required by the project license.

(12) *Owner's Dam Safety Program* means the written document that formalizes a licensee's dam safety program, including, but not limited to, the licensee's dam safety policies; objectives; expectations; responsibilities; training program; communication, coordination, and reporting; record keeping; succession planning; continuous improvement; and audits and assessments.

(13) *Hazard potential* for any dam or water conveyance is a classification based on the potential consequences in the event of failure or misoperation of the dam or water conveyance, and is subdivided into categories (*e.g.,* Low, Significant, High).

(i) *High hazard potential* generally indicates that failure or misoperation will probably cause loss of human life.

(ii) *Significant hazard potential* generally indicates that failure or misoperation will probably not cause loss of human life but may have some amount of economic, environmental, or other consequences.

[200] Commission staff estimates that more than half of the 132 small entities have one or more simple projects and no complex projects.

[201] 5 U.S.C. 804(2).

(iii) *Low hazard potential* generally indicates that failure or misoperation will probably not cause loss of human life but may have some amount of economic, environmental, or other consequences, typically limited to project facilities.

* * * * *

■ 3. Amend § 12.4 by:
■ a. Revising paragraphs (b)(1)(i), (b)(2)(ii)(B), and (b)(2)(iii)(A) and (B);
■ b. Adding paragraphs (b)(2)(iii)(C) and (D);
■ c. Adding paragraphs (b)(2)(iii)(C) and (D);
■ d. Revising paragraphs (c)(1), (c)(2) introductory text, and (c)(3); and
■ e. Adding paragraph (d).

The revisions and addition read as follows:

§ 12.4 Staff administrative responsibility and supervisory authority.

* * * * *

(b) * * *

(1) * * *

(i) Achieving or protecting the safety, stability, security, and integrity of the project works or the ability of any project work to function safely for its intended purposes, including navigation, water power development, or other beneficial public uses; or

(ii) * * *

(2) * * *

(ii) * * *

(B) Any condition affecting the safety of a project or project works or any death, serious injuries, or rescues that occur at, or might be attributable to, the water power project;

(iii) * * *

(A) Any emergency action plan filed under subpart C of this part;

(B) Any Owner's Dam Safety Program filed under subpart F of this part;

(C) Any plan of corrective measures, including related schedules, submitted after the report of an independent consultant pursuant to § 12.36 or § 12.38 or any other inspection report; or

(D) Any public safety plan filed under § 12.52(b).

* * * * *

(c) * * *

(1) Any order or directive issued under this part by a Regional Engineer or other authorized Commission representative may be appealed to the Commission under § 385.207 of this chapter.

(2) Any order or directive issued under this part by a Regional Engineer or other authorized Commission representative is immediately effective and remains in effect until:

* * * * *

(3) An appeal or motion for rescission, amendment, or stay of any order or directive issued under this part must contain a full explanation of why granting the appeal or the request for rescission or amendment of the order or directive, or for stay for the period requested, will not endanger life, health, or property.

(d) *Failure to comply.* If a licensee fails to comply with any order or directive issued under this part by the Commission, a Regional Engineer, or other authorized Commission representative, the licensee may be subject to sanctions, including, but not limited to, civil penalties, orders to cease generation, or license revocation.

Subpart B—Reports and Records

■ 4. Amend § 12.10 by revising paragraph (a)(1), the first sentence of paragraph (a)(2), and paragraph (b) to read as follows:

§ 12.10 Reporting safety-related incidents.

(1) * * * *Initial reports.* An applicant or licensee must report by email or telephone to the Regional Engineer any condition affecting the safety of a project or projects works, as defined in § 12.3(b)(4). The initial report must be made as soon as practicable after that condition is discovered, preferably within 72 hours, without unduly interfering with any necessary or appropriate emergency repair, alarm, or other emergency action procedure.

(2) * * * Following the initial report required in paragraph (a)(1), the applicant or licensee must submit to the Regional Engineer a written report on the condition affecting the safety of the project or project works verified in accordance with § 12.13. * * *

* * * * *

(b) *Deaths, serious injuries, or rescues.* (1) *Initial reports.* An applicant or licensee must report to the Regional Engineer any drowning or other incident resulting in death, serious injury, or rescue that occurs at the project works or involves project operation. The initial report must be made promptly after the incident is discovered, may be provided via email or telephone, and must include a description of the cause and location of the incident.

(2) *Written reports.* Following the initial report required in paragraph (b)(1), the applicant or licensee must submit to the Regional Engineer a written report.

(i) For any death, serious injury, or rescue that is considered or alleged to be project-related, or occurs at the project works, the applicant or licensee must submit to the Regional Engineer a written report that describes any remedial actions taken or proposed to avoid or reduce the chance of similar occurrences in the future. The written report must be verified in accordance with § 12.13.

(ii) For any death that is not project-related, the applicant or licensee may report the death by providing a copy of an article from print or electronic media or a report from a law enforcement agency, if available.

(iii) Serious injuries and rescues that are not project-related do not require a written report.

(3) For the purposes of this paragraph (b), *project-related* includes any deaths, serious injuries, or rescues that:

(i) Involve a project dam, spillway, intake, outlet works, tailrace, power canal, powerhouse, powerline, other water conveyance, or other appurtenances;

(ii) Involve changes in water levels or flows caused by generating units, project gates, or other flow regulating equipment;

(iii) Involve a licensee employee, contractor, or other person performing work at a licensed project facility and are related in whole or in part to the work being performed; or

(iv) Are otherwise attributable to project works and/or project operations.

(5) For the purposes of this paragraph (b), *serious injury* includes any injury that results in treatment at a medical facility or a response by licensee staff or another trained professional.

■ 5. Amend § 12.12 by revising paragraphs (a)(1)(ii) and (b)(3) and adding paragraph (d) to read as follows:

§ 12.12 Maintenance of records.

(a) * * *

(1) * * *

(ii) Instrumentation observations and data collected during construction, operation, or maintenance of the project, including continuously maintained tabular records and graphs illustrating the data collected pursuant to § 12.51; and

* * * * *

(b) * * *

(3) In accordance with the provisions of part 125 of this chapter, the applicant or licensee may select its own storage media to maintain original records or record copies at the project site, provided that appropriate equipment is available to view the records.

* * * * *

(d) *Provision of records.* If the project is subject to subpart D of this part, or if requested by the Regional Engineer, the applicant or licensee must provide to the Regional Engineer physical and electronic copies of the documents

listed in paragraph (a)(1) of this section, except as provided in paragraph (a)(2) of this section.

Subpart C—Emergency Action Plans

§ 12.20 [Amended]

■ 6. Amend § 12.20 in paragraph (a) by removing the words ''three copies of''.

§ 12.22 [Amended]

■ 7. Amend § 12.22 as follows:
■ a. In paragraph (a)(1) introductory text, remove the phrase ''conform with the guidelines established, and from time to time revised, by the Director of the Office of Energy Projects (available from the division of Inspections or the Regional Engineer) to''; and
■ b. In paragraph (a)(2) introductory text, remove ''conforming with the guidelines established by the Director of the Office of Energy Projects''.

§ 12.24 [Amended]

■ 8. Amend § 12.24 in paragraph (c)(3) by removing the words ''three copies of''.

■ 9. Revise subpart D to read as follows:

Subpart D—Review, Inspection, and Assessment by Independent Consultant

Sec.
12.30 Applicability.
12.31 Definitions.
12.32 General inspection requirement.
12.33 Exemption.
12.34 Approval of independent consultant team.
12.35 Periodic inspection.
12.36 Report on a period inspection.
12.37 Comprehensive assessment.
12.38 Report on a comprehensive assessment.
12.39 Evaluation of spillway adequacy.
12.40 Time for inspections and reports.
12.41 Corrective measures.
12.42 Preliminary reports.

Subpart D—Review, Inspection, and Assessment by Independent Consultant

§ 12.30 Applicability.

This subpart D applies to any licensed project development that:

(a) Has a dam

(1) That is more than 32.8 feet (10 meters) in height above streambed, as defined in § 12.31(c); or

(2) With an impoundment gross storage capacity of more than 2,000 acre-feet (2.5 million cubic meters), as defined in § 12.31(d);

(b) Has a project work (dam or water conveyance) or any portion thereof that has a high hazard potential, as defined in § 12.3(b)(13)(i); or

(c) Is determined by the Regional Engineer or other authorized Commission representative to require inspection by an independent consultant under this subpart D.

§ 12.31 Definitions.

For purposes of this subpart D:

(a) *Independent consultant* means any person who:

(1) Is a licensed professional engineer;

(2) Has at least 10 years of experience and expertise in dam design and construction and in the investigation of the safety of existing dams;

(3) Is not an employee of the licensee or its affiliates;

(4) Has not been an employee of the licensee or its affiliates within two years prior to performing engineering and/or scientific services for an inspection or assessment under this subpart D; and

(5) Has not been an agent acting on behalf of the licensee or its affiliates, prior to performing engineering and/or scientific services for an inspection or assessment under this subpart D.

(b) An *independent consultant team* means a group of one or more people that:

(1) Includes at least one independent consultant, as defined in paragraph (a) of this section;

(2) Includes additional qualified engineering and scientific professionals as supporting team members, as needed, who meet the requirements of paragraphs (a)(3) through (5) of this section;

(3) Has demonstrable experience and expertise in dam design, construction, and the evaluation and assessment of the safety of existing dams and their appurtenances, commensurate with the scale, complexity, and relevant technical disciplines of the project and type of review, inspection, and assessment being performed (periodic inspection or comprehensive assessment, as defined in this section).

(c) *Height above streambed* means:

(1) For a dam with a spillway, the vertical distance from the lowest elevation of the natural streambed at the downstream toe of the dam to the maximum water storage elevation possible without any discharge from the spillway. The maximum water storage elevation is:

(i) For gated spillways, the elevation of the tops of the gates; and

(ii) For ungated spillways, the elevation of the spillway crest or the top of any flashboards, whichever is higher.

(2) For a dam without a spillway, the vertical distance from the lowest elevation of the natural streambed at the downstream tow of the dam to the lowest point on the crest of the dam.

(d) Gross storage capacity means the maximum possible volume of water impounded by a dam with zero spill, that is, without the discharge of water over the dam or a spillway.

(e) Periodic inspection means an inspection that meets the requirements of § 12.35 and is performed by an independent consultant team.

(f) Comprehensive assessment means a project review, inspection, and assessment that meets the requirements of § 12.37 and is performed by an independent consultant team.

(g) Previous Part 12D Inspection means the most recent inspection performed in accordance with the provisions of this subpart D (a periodic inspection, comprehensive assessment, or an inspection performed in accordance with the rules established by Order 122).

(h) Previous Part 12D Report means the report on the Previous Part 12D Inspection.

§ 12.32 General inspection requirement.

The project works of each development to which this subpart applies, excluding transmission and transformation facilities, must be inspected on a periodic basis by an independent consultant team to identify any actual or potential deficiencies that might endanger life, health, or property, including deficiencies that may be in the condition of those project works or in the quality or adequacy of project maintenance, safety, methods of operation, analyses, and other conditions. A report must be prepared by the independent consultant team, by or under the direction of at least one independent consultant, who may be a member of a consulting firm, to document the findings and evaluations made during their inspection. The inspection must be performed by the independent consultant team, and the report must be filed by the licensee, in accordance with the procedures in this subpart D. The licensee must ensure that the independent consultant team's report meets all of the requirements set forth in this subpart D.

§ 12.33 Exemption.

(a) Upon written request from the licensee, the Director of the Division of Dam Safety and Inspections may grant an exemption from the requirements of this subpart D in circumstances that clearly establish good cause for exemption.

(b) Good cause for exemption may include the finding that the development in question has no dam, canal, or other water conveyance except those that meet the criteria for low hazard potential as defined in § 12.3(b)(13)(iii).

(c) The Director of the Division of Dam Safety and Inspections, for good cause shown, may rescind any exemption from this subpart D granted by the Director, and may require that a comprehensive assessment be completed prior to considering a subsequent request for exemption from the licensee.

§ 12.34 Approval of independent consultant team.

(a) The licensee must obtain written approval of the independent consultant team, and the facilitator(s) for a potential failure mode analysis or risk analysis, from the Director of the Division of Dam Safety and Inspections, prior to the performance of a periodic inspection or comprehensive assessment under this subpart D.

(b) At least 180 days prior to performing a periodic inspection or comprehensive assessment under this subpart D, the licensee must submit to the Director of the Division of Dam Safety and Inspections, with a copy to the Regional Engineer, a detailed part 12D inspection plan that includes an independent consultant team proposal that describes the technical disciplines and level of expertise required to perform the inspection.

(1) If the independent consultant team comprises one person, the detailed independent consultant team proposal must:

(i) Describe the experience of the independent consultant; and

(ii) Show that the independent consultant meets the requirements as defined in §§ 12.31(a) and 12.31(b)(3).

(2) If the independent consultant team comprises more than one person, the detailed independent consultant team proposal must:

(i) Designate one or more persons to serve as independent consultant(s);

(ii) Describe the experience of each member of the independent consultant team;

(iii) Show that each independent consultant meets the requirements as defined in § 12.31(a);

(iv) Show that each member of the independent consultant team who is not designated as an independent consultant meets the requirements as defined in § 12.31(a)(3) through (5); and

(v) Show that the independent consultant team meets the requirements as defined in § 12.31(b)(3).

(3) If any member of the independent consultant team has performed or substantially contributed to any previous investigation, analysis, or other work product that is required to be reviewed and evaluated by the independent consultant team as part of the inspection being performed, the independent consultant team proposal must include a clear delineation of roles and responsibilities that ensures no team member will be responsible for reviewing and evaluating their own previous work.

(4) If required information about any supporting team member(s) is not available at the time the independent consultant team proposal is submitted to the Director of the Division of Dam Safety and Inspections, the independent consultant team proposal must state that the information will be provided in the preliminary report required by § 12.42.

(5) The 180-day period in paragraph (b) is measured from the scheduled date of the physical field inspection, potential failure mode analysis, or risk analysis, whichever occurs first.

(c) Regardless of experience and qualifications, any independent consultant may be disapproved by the Director of the Division of Dam Safety and Inspections for good cause, such as having had one or more reports on an inspection under this subpart D rejected by the Commission within the preceding five years.

(d) The Director of the Division of Dam Safety and Inspections may, for good cause shown, grant a waiver of the 10-year requirement in § 12.31(a)(2). Any petition for waiver under this paragraph must be filed in accordance with § 385.207 of this chapter.

§ 12.35 Periodic inspection.

A periodic inspection must include:

(a) *Review of prior reports.* The independent consultant team must review and consider all relevant reports on the safety of the development made by or written under the direction of Federal or state agencies, submitted under Commission regulations, or made by other consultants. The licensee must provide to the independent consultant team all information and reports necessary to fulfill the requirements of this section. The independent consultant team must perform sufficient review to have, at the time of the periodic inspection, a full understanding of the design, construction, performance, condition, upstream and downstream hazard, monitoring, operation, and potential failure modes of the project works.

(b) *Physical field inspection.* The independent consultant team must perform a physical field inspection of accessible project works, including galleries, adits, vaults, conduits, earthen and concrete-lined spillway chutes, the exterior of water conveyances, and other non-submerged project works that may require specialized access to facilitate inspection. The inspection shall include review and assessment of all relevant data concerning:

(1) Settlement;
(2) Movement;
(3) Erosion;
(4) Seepage;
(5) Leakage;
(6) Cracking;
(7) Deterioration;
(8) Hydraulics;
(9) Hydrology;
(10) Seismicity;
(11) Internal stress and hydrostatic pressures in project structures and their foundations and abutments;
(12) The condition and performance of foundation drains, dam body drains, relief wells, and other pressure-relief systems;
(13) The condition and performance of any post-tensioned anchors installed, and other major modifications completed, to improve the stability of project works;
(14) The stability of critical slopes adjacent to a reservoir or project works; and
(15) Regional and site geological conditions.

(c) *Review of surveillance and monitoring plan and data.* The independent consultant team must:

(1) Review the surveillance procedures, instrumentation layout, installation details, monitoring frequency, performance history, data history and trends, and relevance to potential failure modes; and

(2) Review the frequency and scope of other surveillance activities.

(d) *Review of dam and public safety programs.* The independent consultant team must review the programs specified in this paragraph.

(1) *Hazard potential.* The independent consultant team must review the potential inundation area and document any significant changes in the magnitude and location of the population at risk since the previous inspection under this subpart D.

(2) *Emergency Action Plan.* If the project development is subject to subpart C of this part, the independent consultant team must review the emergency action plan, including the emergency action plan document itself, the licensee's training program, and any related time-sensitivity assessment(s).

(3) *Public Safety Program.* The independent consultant team must review the public access restrictions and public safety warning signs and devices near the project works pursuant to § 12.52.

(4) *Owner's Dam Safety Program.* If the project is subject to subpart F of this part, the independent consultant team

must review the implementation of the licensee's Owner's Dam Safety Program with respect to the project development being inspected under this subpart D.

§ 12.36 Report on a periodic inspection.

(a) *Scope.* The report must include documentation of all the items listed in § 12.35.

(b) *Specific evaluation.* The report must include specific evaluation of:

(1) The history of performance of the project works through visual observations, analysis of data from monitoring instruments, and previous inspections;

(2) The quality and adequacy of maintenance, surveillance, methods of project operations, and risk reduction measures for the protection of public safety and continued project operation;

(3) Potential failure modes, including:

(i) Each identified potential failure mode associated with the project works and whether any potential failure mode is active or developing; and

(ii) Whether any inspection observations or other conditions indicate that an unidentified potential failure mode is active, developing, or is of sufficient concern to warrant development through a supplemental potential failure mode analysis;

(4) Whether any observed conditions warrant reconsideration of the current hazard potential classification; and

(5) The adequacy of the project's:

(i) Emergency action plan;

(ii) Public safety program; and

(iii) Implementation of the Owner's Dam Safety Program with respect to the project development being inspected under this subpart D.

(c) *Changes since the previous inspection.* The report must include a status update and evaluation of any changes since the Previous Part 12D Inspection concerning:

(1) *Hydrology.* Identify any events that may affect the conclusions of the hydrologic or hydraulic analyses of record and evaluate the effect on the safety and stability of project works.

(2) *Seismicity.* Identify any seismic events that may affect the conclusions of the seismicity analyses of record and evaluate the effect on the safety and stability of project works.

(3) *Modifications to project works.* Identify any modifications made to project works and evaluate the performance thereof with respect to the design intent.

(4) *Methods of operation.* Describe any changes to standard operating procedures, equipment available for project operation, and evaluate the effect on the safety and stability of project works.

(5) *Results of special inspections.* Summarize the findings of any special inspections (dive inspection, rope-access gate inspection, toe drain inspection, etc.), if any.

(6) *Previous recommendations.* List and document the status of recommendations made by the independent consultant(s) in the Previous Part 12D Report, and any earlier recommendations that remained incomplete at the time of the Previous Part 12D Report.

(7) *Outstanding studies and studies completed since the previous inspection.* List and document the status of any studies completed since the Previous Part 12D Inspection and those that remain outstanding at the time of the periodic inspection.

(d) *Recommendations.* Based on the independent consultant team's field observations, evaluations of the project works, and the maintenance, surveillance, and methods of operation of the development, the report must contain recommendations by the independent consultant(s) regarding:

(1) Any corrective measures, described in § 12.41, necessary for the structures, maintenance or surveillance procedures, or methods of operation of the project works;

(2) A reasonable time to carry out each corrective measure; and

(3) Any new or additional monitoring instruments, periodic observations, special inspections, or other methods of monitoring project works or conditions that may be required.

(e) *Dissenting views.* If the inspection and report were conducted and prepared by more than one independent consultant, the report must clearly identify and describe any dissenting views concerning the evaluations or recommendations of the report that might be held by any individual consultant.

(f) *List of participants.* The report must identify all professional personnel who have participated in the inspection of the project or in preparation of the report and the independent consultant(s) who directed those activities.

(g) *Statement of independence.* Each independent consultant responsible for the report must declare that all conclusions and recommendations in the report are made independently of the licensee, its employees, and its representatives.

(h) *Signature.* The report must be signed and sealed, with a professional engineer's seal, by each independent consultant responsible for the report.

§ 12.37 Comprehensive assessment.

A comprehensive assessment must include:

(a) *Review of prior reports and analyses of record.* The independent consultant team must review and consider all relevant reports on the safety of the development made by or written under the direction of Federal or state agencies, submitted under Commission regulations, or made by other consultants. The licensee must provide to the independent consultant team all information, reports, and analyses of record necessary to fulfill the requirements of this section.

(1) In addition to the requirements of § 12.35(a), the independent consultant team must have a full understanding of the risk associated with the project works.

(2) The independent consultant team shall perform a detailed review of the as-built drawings; monitoring data; and the methods, assumptions, calculations, results, and conclusions of the analyses of record pertaining to:

(i) Geology and seismicity;

(ii) Hydrology and hydraulics;

(iii) Stability and structural integrity of project works; and

(iv) Any other analyses relevant to the safety, stability, and operation of project works.

(b) *Physical field inspection.* The independent consultant team must perform a physical field inspection that complies with § 12.35(b).

(c) *Review of surveillance and monitoring plan and data.* The independent consultant team must perform a review of surveillance and monitoring plan and data that complies with § 12.35(c).

(d) *Review of dam and public safety programs.* The independent consultant team must perform a review of dam and public safety programs that complies with § 12.35(d).

(e) *Supporting Technical Information Document.* The comprehensive assessment shall include a review of the Supporting Technical Information Document.

(f) *Potential failure mode analysis.* The comprehensive assessment shall include a potential failure mode analysis.

(g) *Risk analysis.* The comprehensive assessment shall include a risk analysis. The Regional Engineer may, for good cause shown, grant a waiver of the requirement to complete a risk analysis. Any petition for waiver under this paragraph must be filed in accordance with § 385.207 of this chapter.

§ 12.38 Report on a comprehensive assessment.

(a) *Scope.* The comprehensive assessment report must include documentation of all the items listed in § 12.37.

(b) *Specific evaluation.* In addition to the items listed in § 12.36(b)(1) through § 12.36(b)(5), the comprehensive assessment report must evaluate:

(1) The adequacy of spillways, including the effects of overtopping of nonoverflow structures, as described in § 12.39;

(2) The structural adequacy and stability of structures under all credible loading conditions;

(3) The potential for internal erosion and/or piping of embankments, foundations, and abutments;

(4) The design and construction practices used during original construction and subsequent modifications, in comparison with the industry best practices in use at the time of the inspection under this subpart D;

(5) The adequacy of the Supporting Technical Information Document and the attached electronic records; and

(6) The adequacy and findings of the potential failure mode analysis and risk analysis report(s).

(c) *Analyses of record.* The comprehensive assessment report must include the independent consultant team's evaluation of the assumptions, methods, calculations, results, and conclusions of the items listed in § 12.37(a)(2)(i) through (iv). The evaluation must:

(1) Address the accuracy, relevance, and consistency with the current state of the practice of dam engineering;

(2) Be accompanied by sufficient documentation of the independent consultant team's rationale, including, as needed, new calculations by the independent consultant team to verify that the assumptions, methods, calculations, results, and conclusions in the analyses of record are correct; and

(3) If the independent consultant team is unable to review the analyses of record for any of the items listed in § 12.37(a)(2)(i) through (iv); or if the independent consultant team disagrees with the assumptions, methods, calculations, results, or conclusions therein; the independent consultant(s) must recommend that the licensee complete new analyses to address the identified concerns.

(d) *Changes since the previous inspection.* The requirements of this section are the same as described in § 12.36(c).

(e) *Recommendations.* The requirements of this section are the same as described in § 12.36(d).

(f) *Dissenting views.* The requirements of this section are the same as described in § 12.36(e).

(g) *List of participants.* The requirements of this section are the same as described in § 12.36(f).

(h) *Statement of independence.* The requirements of this section are the same as described in § 12.36(g).

(i) *Signature.* The requirements of this section are the same as described in § 12.36(h).

§ 12.39 Evaluation of spillway adequacy.

The adequacy of any spillway must be evaluated, as part of a comprehensive assessment or as otherwise requested by the Regional Engineer, by considering hazard potential which would result from failure of the project works during normal and flood flows.

(a) If failure would present a hazard to human life or cause significant property damage, the independent consultant team must evaluate the following for floods up to and including the probable maximum flood:

(1) The ability of project works to withstand the loading or overtopping which may occur during floods;

(2) The capacity of spillways to prevent the reservoir from rising to an elevation that would endanger the project works; and

(3) The potential for misoperation of; failure to operate; blockage of; or debilitating damage to a spillway and its appurtenances (including but not limited to structural, mechanical, and electrical components of gates, valves, chutes, and training walls); and the effect thereof on the maximum reservoir level and potential for surcharged loading or overtopping to occur during floods.

(b) If failure would not present a hazard to human life or cause significant property damage, spillway adequacy may be evaluated by means of a design flood of lesser magnitude than the probable maximum flood provided that the most recent comprehensive assessment report required by § 12.38 provides a detailed explanation of and rationale for the finding that structural failure would not present a hazard to human life or cause significant property damage.

§ 12.40 Time for inspections and reports.

(a) *Projects previously inspected by independent consultant.* For any project that was inspected under this subpart D prior to April 11, 2022, under the Commission's rules in effect on January 1, 2022:

(1) A periodic inspection or comprehensive assessment must be completed, and the report on it filed, within five years of the due date of the Previous Part 12D Report.

(2) For any report due to be filed under this subpart D after October 11, 2023, the Regional Engineer may require that it be a report on a comprehensive assessment or a report on a periodic inspection.

(3) The first comprehensive assessment under this subpart must be completed, and the report on it filed, by December 31, 2038.

(b) *Projects not previously inspected by independent consultant.* For any project that was not inspected under this subpart D prior to April 11, 2022, under the Commission's rules in effect on January 1, 2022:

(1) For any development that meets the criteria specified in § 12.30(a)(1) or § 12.30(a)(2), and was constructed before the date of issuance of the order licensing that development, or amending a license to include that development, the first comprehensive assessment under this subpart D must be completed, and the report on it filed, not later than two years after the date of issuance of the order licensing that development or amending the license to include that development.

(2) For any development that was constructed after the date of issuance of the order licensing that development, or amending a license to include that development, the first comprehensive assessment under this subpart D must be completed, and the report on it filed, not later than five years after the date of issuance of the order licensing that development or amending the license to include that development.

(3) For any development not set forth in either paragraph (b)(1) or (b)(2) of this section, the first comprehensive assessment under this subpart D must be completed, and the report on it filed, by a date specified by the Regional Engineer. The filing date must not be more than two years after the date of notification that a comprehensive assessment and report under this subpart D are required.

(c) *Subsequent inspections and reports.* For subsequent reports filed under this subpart D:

(1) A comprehensive assessment must be completed, and the report on it filed, within 10 years of the date the previous comprehensive assessment report was due to be filed.

(2) A periodic inspection must be completed, and the report on it filed, within five years of the date the previous comprehensive assessment report was due to be filed.

(d) *Extension of time.* For good cause shown, the Regional Engineer may extend the time for filing the report on

a comprehensive assessment or periodic inspection under this subpart D.

(e) *Type of Report.* For good cause, the Regional Engineer may require that any report due to be filed under this subpart D be a report on a comprehensive assessment or a report on a periodic inspection, notwithstanding the type of review (periodic inspection or comprehensive assessment) scheduled to be performed under paragraphs (c)(1) and (c)(2) of this section.

§ 12.41 Corrective measures.

(a) *Corrective measures.* For items identified during a periodic inspection or comprehensive assessment as requiring corrective action, the following conditions apply:

(1) *Corrective plan and schedule.* (i) Not later than 60 days after a report on a periodic inspection or comprehensive assessment is filed with the Regional Engineer, the licensee must submit to the Regional Engineer a plan and schedule for addressing the recommendations of the independent consultant(s) and for investigating, designing, and carrying out any corrective measures that the licensee proposes to implement.

(ii) The plan and schedule may include any proposal, including taking no action, that the licensee considers a preferable alternative to any corrective measure recommended in the report of the independent consultant(s). Any proposed alternative must be accompanied by the licensee's complete justification and detailed analysis and evaluation in support of that alternative.

(2) *Carrying out the plan.* The licensee must complete all corrective measures in accordance with the plan and schedule submitted to, and approved or modified by, the Regional Engineer, and on an annual basis must submit a status report on the corrective measures until all have been completed.

(3) *Extension of time.* For good cause shown, the Regional Engineer may extend the time for filing the plan and schedule required by this section.

(b) *Emergency corrective measures.* The licensee must provide that if, in the course of a periodic inspection or comprehensive assessment conducted under this subpart D, an independent consultant discovers any condition for which emergency corrective measures are advisable, such as a condition affecting the safety of a project or project works as defined in § 12.3(b)(4) of this part, the independent consultant must immediately notify the licensee and the licensee must report that condition to the Regional Engineer pursuant to § 12.10(a) of this part. Emergency corrective measures must be included in the corrective plan and schedule required by paragraph (a)(1) of this section, and are also subject to paragraphs (a)(2) and (a)(3) of this section.

§ 12.42 Preliminary reports.

At least 30 days prior to the performance of a periodic inspection or comprehensive assessment, a preliminary report prepared by the independent consultant team must be filed by the licensee with the Regional Engineer to document the initial findings, understanding, and preparation of the independent consultant team.

(a) For any periodic inspection, the 30-day period is measured from the scheduled date of the physical field inspection.

(b) For any comprehensive assessment, the 30-day period is measured from the scheduled date of the physical field inspection, potential failure mode analysis, or risk analysis, whichever occurs first.

(c) If the Regional Engineer determines that the preliminary report does not clearly demonstrate that the independent consultant team is adequately prepared for the inspection, the Regional Engineer may require the inspection to be postponed. Any such postponement shall not constitute good cause for an extension of time under § 12.40(d).

(d) If any required supporting team member information was not provided with the independent consultant team proposal required by § 12.34(b), it must be provided with the preliminary report.

Subpart E—Other Responsibilities of Applicant or Licensee

§§ 12.40 through 12.44 [Redesignated as §§ 12.50 through 12.54]

■ 10. Redesignate §§ 12.40 through 12.44 as §§ 12.50 through 12.54, respectively.

§§ 12.55 through 12.59 [Reserved]

■ 11. Add reserved §§ 12.55 through 12.59.

■ 12. Amend newly designated § 12.50 in paragraph (a) by removing ''§ 12.39'' and adding in its place ''§ 12.41''.

■ 13. Revise newly redesignated § 12.52 to read as follows:

§ 12.52 Warning and safety devices.

(a) To the satisfaction of, and within a time specified by the Regional Engineer, an applicant or licensee must install, operate, and maintain any signs, lights, sirens, barriers, or other safety devices that may reasonably be necessary or desirable to warn the public of fluctuations in flow from the project or otherwise to protect the public in the use of project lands and waters.

(b) The Regional Engineer may require the applicant or licensee to prepare, periodically update, and file with the Commission a public safety plan that formalizes the installation, operation, and maintenance of all necessary public safety devices.

§ 12.54 [Amended]

■ 14. Amend newly redesignated § 12.54 as follows:

■ a. In paragraph (b)(2), remove ''the periodic'' and add in its place ''an'' and add ''gate'' directly following the second appearance of the word ''spillway''; and

■ b. In paragraph (c)(2), remove ''the periodic'' and add in its place ''an''.

■ 15. Add subpart F, consisting of §§ 12.60 through 12.65, to read as follows:

Subpart F—Owner's Dam Safety Program

Sec.

12.60 Applicability.
12.61 Definitions.
12.62 General requirements.
12.63 Contents of Owner's Dam Safety Program.
12.64 Annual review and update of Owner's Dam Safety Program.
12.65 Independent external audit and peer review.

§ 12.60 Applicability.

The licensee of any dam or other project work classified as having a high or significant hazard potential, as defined in § 12.3(b)(13)(i) and (ii), is required to submit an Owner's Dam Safety Program to the Regional Engineer.

§ 12.61 Definitions.

For purposes of this subpart F:

(a) *Chief Dam Safety Engineer* means the designated individual, who is a licensed professional engineer with experience in dam safety, who oversees the implementation of the Owner's Dam Safety Program and has primary responsibility for ensuring the safety of the licensee's dam(s) and other project works.

(b) *Chief Dam Safety Coordinator* means the designated individual, who is not required to be a licensed professional engineer, who oversees the implementation of the Owner's Dam Safety Program and has primary responsibility for ensuring the safety of the licensee's dam(s) and other project works.

§ 12.62 General requirements.

(a) The Owner's Dam Safety Program shall designate either a Chief Dam Safety Engineer or Chief Dam Safety Coordinator, as defined in § 12.61. Any Owner's Dam Safety Program that includes one or more dams or other project works classified as having a high hazard potential, as defined in § 12.3(b)(13)(i), shall designate a Chief Dam Safety Engineer.

(b) The Owner's Dam Safety Program must be signed by the Owner and, as applicable, the Chief Dam Safety Engineer or the Chief Dam Safety Coordinator.

(c) The Owner's Dam Safety Program must be reviewed and updated on a periodic basis as described in § 12.64 and, if applicable, must undergo an independent external audit or peer review as described in § 12.65.

(d) The Owner may delegate to others, such as consultants, the work of establishing and implementing the Owner's Dam Safety Program and the role of Chief Dam Safety Engineer or Chief Dam Safety Coordinator, as applicable.

(1) If the role of Chief Dam Safety Engineer or Chief Dam Safety Coordinator is delegated to an outside party who does not oversee the day-to-day implementation of the Owner's Dam Safety Program, the Owner must designate an individual responsible for overseeing the day-to-day implementation.

(2) Any delegation made in accordance with paragraph (d) of this section must be documented in the Owner's Dam Safety Program.

(3) The Owner retains ultimate responsibility for the safety of the dam(s) and other project works covered by the Owner's Dam Safety Program.

§ 12.63 Contents of Owner's Dam Safety Program.

The Owner's Dam Safety Program shall contain, at a minimum, the following sections:

(a) Dam safety policy, objectives, and expectations;

(b) Responsibilities for dam safety;

(c) Dam safety training program;

(d) Communication, coordination, reporting, and reports;

(e) Record keeping and databases; and

(f) Continuous improvement.

§ 12.64 Annual review and update of Owner's Dam Safety Program.

The Owner's Dam Safety Program, and the implementation thereof, shall be reviewed at least once annually by the licensee's dam safety staff and discussed with senior management of the Owner's organization. The licensee shall submit the results of the annual review, including findings, analysis, corrective measures, and/or revisions to the Owner's Dam Safety Program, to the Regional Engineer.

§ 12.65 Independent external audit and peer review.

(a) *Applicability.* For licensees of one or more dams or other project works classified as having a high hazard potential, as defined in § 12.3(b)(13)(i), an independent external audit or peer review of the Owner's Dam Safety Program, and the implementation thereof, shall be performed at an interval not to exceed five years.

(b) *Qualifications.* A statement of qualifications for the proposed auditor(s) or peer review team that demonstrates independence from the licensee and its affiliates shall be submitted to the Regional Engineer for review, and written acceptance thereof must be obtained from the Regional Engineer prior to performing the audit or peer review.

(c) *Reporting.* (1) The auditor(s) or peer review team shall document their findings in a report.

(2) The report on the audit or peer review shall be reviewed by the Owner, Chief Dam Safety Engineer or Chief Dam Safety Coordinator, and management having responsibility in the area(s) audited or reviewed.

(3) The report on the audit or peer review shall be submitted to the Regional Engineer.

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