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Title 18: Conservation of Power and Water Resources

PART 12—SAFETY OF WATER POWER PROJECTS AND PROJECT WORKS

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SOURCE: Order 122, 46 FR 9036, Jan. 28, 1981, unless otherwise noted.

EDITORIAL NOTE: Nomenclature changes to part 12 appear at 69 FR 32438, June 10, 2004.

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Subpart A—General Provisions

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§12.1 Applicability.

(a) Except as otherwise provided in this part or ordered by the Commission or its authorized representative, the provisions of this part apply to:

(1) Any project licensed under Part I of the Federal Power Act;

(2) Any unlicensed constructed project for which the Commission has determined that an application for license must be filed under Part I of the Act; and

(3) Any project exempted from licensing under Part I of the Federal Power Act, pursuant to subparts J or K of part 4 of this chapter, to the extent that the Commission has conditioned the exemption on compliance with any particular provisions of this part.

(b) The provisions of this part apply to a project that uses a Government dam only with respect to those project works, lands, and waters specifically licensed by the Commission.

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§12.2 Rules of construction.

- (a) If any term, condition, article, or other provision in a project license is similar to any provision of this part, the licensee must comply with the relevant provision of this part, unless the Commission or the Director of the Office of Energy Projects determines that compliance with the relevant provision of the license will better protect life, health, or property.
- (b) A licensee may request from the Director of the Office of Energy Projects a ruling on the applicability to its actions of any provision of its license that is similar to a provision of this part. A ruling by the Director may be appealed under §385.207 of this chapter.

[Order 122, 46 FR 9036, Jan. 28, 1981, as amended by Order 225, 47 FR 19056, May 3, 1982; 49 FR 29370, July 20, 1984]

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§12.3 Definitions.

- (a) General rule. For purposes of this part, terms defined in section 3 of the Federal Power Act, 16 U.S.C. 796, have the same meaning as they have under the Act.
- (b) Definitions. The following definitions apply for the purposes of this part:
- (1) Applicant means any person, state, or municipality that has applied for a license for an unlicensed, constructed project and any owner of an unlicensed, constructed project for which the Commission has determined that an application for license must be filed.
- (2) Owner means any person, state, or municipality, or combination thereof, that has a real property interests in a water power project sufficient to operate and maintain the project works.
- (3) Authorized Commission representative means the Director of the Office of Energy Projects, the Director of the Division of 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; 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:

- (i) Unscheduled rapid draw-down of impounded water;
 - (ii) Failure of any facility that controls the release or storage of impounded water, such as a gate or a valve;
 - (iii) Failure or unusual movement, subsidence, or settlement of any part of a project work;
 - (iv) Unusual concrete deterioration or cracking, including development of new cracks or the lengthening or widening of existing cracks;
 - (v) Piping, slides, or settlements of materials in any dam, abutment, dike, or embankment;
 - (vi) Significant slides or settlements of materials in areas adjacent to reservoirs;
 - (vii) Significant damage to slope protection;
 - (viii) Unusual instrumentation readings;
 - (ix) New seepage or leakage or significant gradual increase in pre-existing seepage or leakage;
 - (x) Sinkholes;
 - (xi) Significant instances of vandalism or sabotage;
 - (xii) Natural disasters, such as floods, earthquakes, or volcanic activity;
 - (xiii) Any other signs of instability of any project work.
- (5) Constructed project means any project with an existing dam.
 - (6) Dam means any structure for impounding or diverting water.
 - (7) 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.
 - (8) Modification means any activity, including repair or reconstruction, that in any way changes the physical features of the project from the state reflected in the plans or drawings or other documents filed with the Commission.

(9) Project emergency means an impending or actual sudden release of water at the project caused by natural disaster, accident, or failure of project works.

(10) Regional Engineer means the person in charge of the Commission's regional office for the region (Atlanta, Chicago, Portland, New York, or San Francisco) where a particular project is located.

(11) Act means the Federal Power Act.

[Order 122, 46 FR 9036, Jan. 28, 1981, as amended at 49 FR 29370, July 20, 1984; Order 647, 69 FR 32438, June 10, 2004]

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§12.4 Staff administrative responsibility and supervisory authority.

(a) Administrative responsibility. The Director of the Office of Energy Projects is responsible for administering the Commission's project safety program and reports directly to the Chairman of the Federal Energy Regulatory Commission.

(b) Supervisory authority of the Regional Engineer or other authorized representative. (1) Any water power project and the construction, operation, maintenance, use, repair, or modification of any project works are subject to the inspection and the supervision of the Regional Engineer or any other authorized Commission representative for the purpose of:

- (i) Achieving or protecting the safety, stability, 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) Otherwise protecting life, health, or property.

(2) For the purposes set forth in paragraph (b)(1) of this section, a Regional Engineer or other authorized Commission representative may:

(i) Test or inspect any water power project or project works or require that the applicant or licensee perform such tests or inspections or install monitoring instruments;

(ii) Require an applicant or a licensee to submit reports or information, regarding:

(A) The design, construction, operation, maintenance, use, repair, or modification of a water power project or project works; and

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

(iii) Require an applicant or a licensee to modify:

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

(B) Any plan of corrective measures, including related schedules, submitted after the report of an independent consultant pursuant to §12.37 or any other inspection report;

(iv) Require an applicant or licensee to take any other action with respect to the design, construction, operation, maintenance, repair, use, or modification of the project or its works that is, in the judgment of the Regional Engineer or other authorized Commission representative, necessary or desirable.

(v) Establish the time for an applicant or licensee to provide a schedule for or to perform any actions specified in this paragraph.

(c) Appeal, stay, rescission, or amendment of order or directive. (1) Any order or directive issued under this section or under the provisions of subparts B through E of 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 section by a Regional Engineer or other authorized Commission representative is immediately effective and remains in effect until:

(i) The Regional Engineer or other authorized Commission representative who issued the order or directive rescinds or amends that order or directive or stays its effect; or

(ii) The Commission stays the effect of the order or directive, or amends or rescinds the order or directive on appeal.

(3) An appeal or motion for rescission, amendment, or stay of any order or directive issued under this section 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.

[Order 122, 46 FR 9036, Jan. 28, 1981, as amended by Order 225, 47 FR 19056, May 3, 1982; 49 FR 29370, July 20, 1984; Order 756, 77 FR 4894, Feb. 1, 2012]

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§12.5 Responsibilities of licensee or applicant.

A licensee or applicant must use sound and prudent engineering practices in any action relating to the design, construction, operation, maintenance, use, repair, or modification of a water power project or project works.

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Subpart B—Reports and Records

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§12.10 Reporting safety-related incidents.

(a) Conditions affecting the safety of a project or its works—1) Oral reports. An applicant or licensee must report by 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 oral report must be made as soon as practicable after that condition is discovered, without unduly interfering with any necessary or appropriate emergency repair, alarm, or other emergency action procedure.

(2) Written reports. Following the initial oral 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. The written report must be submitted within the time specified by the Regional Engineer and must contain any information the Regional Engineer directs, including:

- (i) The causes of the condition;
- (ii) A description of any unusual occurrences or operating circumstances preceding the condition;
- (iii) An account of any measure taken to prevent worsening of the condition;
- (iv) A detailed description of any damage to project works and the status of any repair;
- (v) A detailed description of any personal injuries;
- (vi) A detailed description of the nature and extent of any private property damages; and
- (vii) Any other relevant information requested by the Regional Engineer.

(3) The level of detail required in any written report must be commensurate with the severity and complexity of the condition.

(b) Deaths or serious injuries. (1) Promptly after becoming aware of any drowning or other accident resulting in death or serious injury that occurs at the project, the applicant or licensee must report that drowning or other accident to the Regional Engineer in writing, including a description of the cause and location of the accident.

(2) The written report of any death or serious injury considered or alleged to be project related must also describe any remedial actions taken or proposed to avoid or reduce the chance of similar occurrences in the future and be verified in accordance with §12.13.

(3) Accidents that are not project-related may be reported by providing a copy of a clipping from a newspaper article, if available.

(4) For the purposes of this paragraph, project-related includes 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.

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§12.11 Reporting modifications of the project or project works.

(a) Reporting requirement. Regardless of whether a particular modification is permitted without specific prior Commission approval, an applicant or licensee must report any modification of the project or project works to the Regional Engineer in writing, verified in accordance with §12.13, at the time specified in paragraph (b) of this section.

(b) Time of reporting. (1) Any modification that is an emergency measure taken in response to a condition affecting the safety of the project or project works must be submitted with the report of that condition required by §12.10(a)(2).

(2) In all other instances, the modification must be reported at least 60 days before work on the modification begins.

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§12.12 Maintenance of records.

(a) Kinds of records—1) General rule. Except as provided in paragraph (a)(2) of this section, the applicant or licensee must maintain as permanent project records in addition to those required in part 125 of this chapter, the following information:

(i) Engineering and geological data relating to design, construction, maintenance, repair, or modification of the project, including design memoranda and drawings, laboratory and other testing reports, geologic data (such as maps, sections, or logs of exploratory borings or trenches, foundation treatment, and excavation), plans and specifications, inspection and quality control reports, as built construction drawings, designers' operating criteria, photographs, and any other data necessary to demonstrate that construction, maintenance, repair, or modification of the project has been performed in accordance with plans and specifications;

(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 §12.41; and

(iii) The operational and maintenance history of the project, including:

(A) The dates, times, nature, and causes of any complete or partial unscheduled shut-down, suspension of project operations, or reservoir filling restrictions related to the safety of the project or project works; and

(B) Any reports of project modifications, conditions affecting the safety of the project or project works, or deaths or serious injuries at the project.

(2) Exception. The applicant or licensee is not required to maintain as permanent project records any information specified in paragraph (a)(1) of this section that was or reasonably would have been prepared before the applicant or licensee acquired control of the project and that the applicant or the licensee never acquired or reasonably could have acquired.

(b) Location of records—1) Original records. The applicant or licensee must maintain the originals of all permanent project records at a central location, such as the project site or the main business office of the applicant or licensee, secure from damage from any conceivable failure of the project works and convenient for inspection. The applicant or licensee must keep the Regional Engineer advised of the location of the permanent project records.

(2) Record copies. If the originals of the permanent project records are maintained at a central location other than the project site, the applicant or licensee must maintain at the project site copies of at least the project Exhibit G or L (design drawings), instrumentation data, and operational history that are necessary to the safe and efficient operation of the project.

(3) In accordance with the provisions of part 125 of this chapter, the applicant or licensee may maintain original records, or record copies at the project site, in microform, if appropriate equipment is readily available to view the records.

(c) Transfer of records. If the project is taken over by the United States at the end of a license term or the Commission issues a new license to a different licensee, the prior licensee must transfer the originals of all permanent project records to the custody of the administering Federal agency or department or to the new licensee.

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§12.13 Verification form.

If a document submitted in accordance with the provisions of this part must be verified, the form of verification attached to the document must be the following:

State of [],

County of [], ss:

The undersigned, being first duly sworn, states that [he, she] has read the above document and knows the contents of it, and that all of the statements contained in that document are true and correct, to the best of [his, her] knowledge and belief.

[Name of person signing]

Sworn to and subscribed before me this [day] of [month], [year].

[Seal]

[Signature of notary public or other state or local official authorized by law to notarize documents.]

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Subpart C—Emergency Action Plans

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§12.20 General requirements.

- (a) Unless provided with a written exemption pursuant to §12.21, every applicant or licensee must develop and file with the Regional Engineer three copies of an emergency action plan and appendices, verified in accordance with §12.13.
- (b) The emergency action plan must be:
 - (1) Developed in consultation and cooperation with appropriate Federal, state, and local agencies responsible for public health and safety; and
 - (2) Designed to provide early warning to upstream and downstream inhabitants, property owners, operators of water-related facilities, recreational users, and other persons in the vicinity who might be affected by a project emergency as defined in §12.3(b)(9).

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§12.21 Exemptions.

- (a) Grant of exemption. Except as provided in paragraph (b), if an applicant or licensee satisfactorily demonstrates that no reasonably foreseeable project emergency

would endanger life, health, or property, the Regional Engineer may exempt the applicant or licensee from filing an emergency action plan.

(b) No exemption. A licensee or applicant may not be exempted from the requirements of §12.22(c) for a radiological response plan.

(c) Conditions of exemptions. (1) An applicant or licensee who receives an exemption from filing an emergency action plan has the continuing responsibility to review circumstances upstream and downstream from the project to determine if, as a result of changed circumstances, a project emergency might endanger life, health, or property.

(2) Promptly after the applicant or licensee learns that, as a result of any change in circumstances, a project emergency might endanger life, health, or property, the applicant or licensee must inform the Regional Engineer of that changed condition without unduly delaying the preparation and implementation of the emergency action plan.

(3) Comprehensive review of the necessity for an emergency action plan must be conducted at least once each year.

(d) Revocation of exemption. (1) The Regional Engineer may revoke an exemption granted under this section if it is determined that, as a result of any change in circumstances, a project emergency might endanger life, health, or property.

(2) If an exemption is revoked, the applicant or licensee must file an emergency action plan within the time specified by the Regional Engineer.

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§12.22 Contents of emergency action plan.

(a) Contents—(1) The plan itself. An emergency action plan must 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 provide:

(i) Instructions to project operators and attendants and other responsible personnel about the actions they are to take during a project emergency;

(ii) Detailed plans for notifying potentially affected persons, appropriate Federal, state, and local agencies, including public safety and law enforcement bodies, and medical units; and

(iii) Procedures for controlling the flow of water, including actions to reduce inflows to reservoirs, such as limiting outflows from upstream dams or control

structures, and actions to reduce downstream flows, such as increasing or decreasing outflows from downstream dams or control structures, on the waterway on which the project is located or its tributaries.

(2) Appendix to the plan. Each copy of the emergency action plan submitted to the Regional Engineer must be accompanied by an appendix conforming with the guidelines established by the Director of the Office of Energy Projects that contains:

(i) Plans for training project operators, attendants, and other responsible personnel to respond properly during a project emergency, including instructions on the procedures to be followed throughout a project emergency and the manner in which the licensee will periodically review the knowledge and understanding that these personnel have of those procedures;

(ii) A summary of the study used for determining the upstream and downstream areas that may be affected by sudden release of water, including a summary of all criteria and assumptions used in the study and, if required by the Regional Engineer, inundation maps; and

(iii) Documentation of consultations with Federal, state, and local agencies, including public safety and law enforcement bodies, and medical units.

(b) Special factors. The applicant or licensee must take into account in its emergency action plan the time of day, particularly hours of darkness, in establishing the proper actions and procedures for use during a project emergency.

(c) Additional requirements for projects near nuclear power plants—1) Radiological response plan. If the personnel operating any powerhouse or any spillway control facilities, such as gates or valves, of a project would be located within ten miles of a nuclear power plant reactor, the applicant or licensee must file, separately or as a supplement to any required emergency action plan, a radiological response plan that provides for emergency procedures to be taken if an accident or other incident results in the release of radioactive materials from the nuclear power plant reactor.

(2) A radiological response plan must:

(i) To the maximum extent practicable, include sufficient procedural safeguards to ensure that, during or following an accident or other incident involving the nearby nuclear power plant reactor, the project may be safely operated and, if evacuation is necessary, the project may be left unattended without danger to the safety of any project dam or to life, health, or safety upstream or downstream from the project; and

(ii) Explain the provisions, developed after consultation with the direct purchasers of project power, for cessation, curtailment, or continuation of generation of electric

power at the project during or following an accident or other incident involving the nearby nuclear power plant reactor.

(3) Time of filing radiological response plan. (i) For a constructed project with an otherwise acceptable emergency action plan on file, any radiological response plan required must be filed:

(A) If an operating license for the nuclear power plant has been issued on or before March 1, 1981, not later than three months from March 1, 1981; or

(B) In all other instances, not later than three months after the date an operating license for the nuclear power plant is issued.

(ii) For any project not described in §12.22(c)(3)(i), any radiological response plan required must be filed contemporaneously with the emergency action plan or, if the project has been exempted from filing an emergency action plan, at the time the emergency action plan would otherwise have been required to be filed pursuant to §12.23.

[Order 122, 46 FR 9036, Jan. 28, 1981, as amended at 49 FR 29370, July 20, 1984]

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§12.23 Time for filing emergency action plan.

(a) Unconstructed project. (1) Except as set forth in paragraph (a)(2), the emergency action plan for an unconstructed project must be filed no later than 60 days before the initial filling of the project reservoir begins.

(2) Temporary impoundment during construction. (i) For any unconstructed project, if a temporary impoundment would be created during construction, such as through construction of temporary or permanent cofferdams or large sediment control structures, and an accident to or failure of the impounding structures might endanger construction workers or otherwise endanger public health or safety, a temporary construction emergency action plan must be filed no later than 60 days before construction begins.

(ii) No later than 60 days before the initial filling of a project reservoir begins at a project for which a temporary emergency action plan has been filed the applicant or licensee must file modifications to that plan or a new plan, taking into account the differences in circumstances between the construction and post-construction periods.

(b) Unlicensed constructed project. (1) If the Commission has determined on or before March 1, 1981 that a license is required for an unlicensed constructed project, the emergency action plan for that project must be filed no later than:

(i) Six months after March 1, 1981; or

(ii) Any earlier date specified by the Commission or its authorized representative.

(2) Except as set forth in paragraph (b)(1) of this section, the emergency action plan for an unlicensed constructed project must be filed no later than the earliest of:

- (i) Six months after the date that a license application is filed;
- (ii) Six months after the date that the Commission issues an order determining that licensing is required; or
- (iii) A date specified by the Commission or its authorized representative.

(c) Licensed constructed project. If a licensed constructed project does not have an acceptable emergency action plan on file on March 1, 1981 the emergency action plan must be filed no later than:

- (1) Six months after March 1, 1981; or
 - (2) Any earlier date specified by the Commission or its authorized representative.
- (d) For good cause shown, the Regional Engineer may grant an extension of time for filing all or any part of an emergency action plan.

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§12.24 Review and updating of plans.

(a) The emergency action plan must be continually updated to reflect any changes in the names or titles of project operators and attendants and other personnel with specified responsibilities for actions in an emergency and any changes in names of persons to call, telephone numbers, radio call signals, or other information critical to providing notification to affected persons, Federal, state, and local agencies, and medical units.

(b) An applicant or licensee has continuing responsibility to review the adequacy of the emergency action plan in light of any significant changes in upstream or downstream circumstances which might affect water flows or the location or extent of the areas, persons, or property that might be harmed in a project emergency.

(c) Promptly after an applicant or licensee learns of any change in circumstances described in paragraph (b) of this section, the applicant or licensee must:

- (1) Inform the Regional Engineer of that change in circumstances;
- (2) Consult and cooperate with appropriate Federal, state, and local agencies responsible for public health and safety to determine any advisable revisions to the emergency action plan; and

- (3) File with the Regional Engineer three copies of any revisions to the appropriate studies, maps, plans, procedures, or other information in the emergency action plan itself or its appendices that have changed as a result of that consultation.
- (d) An applicant or licensee must conduct a comprehensive review of the adequacy of the emergency action plan at least once each year.

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§12.25 Posting and readiness.

- (a) A copy of the current emergency action plan itself must be posted in a prominent location readily accessible to the licensee's or applicant's operating personnel who are responsible for controlling water flows and for notifying public health and safety agencies and affected persons.
- (b) Each licensee or applicant must annually test the state of training and readiness of key licensee or applicant personnel responsible for responding properly during a project emergency to ensure that they know and understand the procedures to be followed throughout a project emergency.

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Subpart D—Inspection by Independent Consultant

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§12.30 Applicability.

This subpart applies to any licensed project development that has a dam:

- (a) That is more than 32.8 feet (10 meters) in height above streambed, as defined in §12.31(c);
- (b) That impounds an impoundment with a gross storage capacity of more than 2,000 acre-feet (2.5 million cubic meters); or
- (c) That has a high hazard potential and is determined by the Regional Engineer or other authorized Commission representative to require inspection by an independent consultant under this subpart.

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§12.31 Definitions.

For purposes of this subpart:

- (a) Independent consultant means any person who:

- (1) Is a licensed professional engineer;
- (2) Has at least 10 years experience and expertise in dam design and construction and in the investigation of the safety of existing dams; and
- (3) Is not, and has not been within two years before being retained to perform an inspection under this subpart, an employee of the licensee or its affiliates or an agent acting on behalf of the licensee or its affiliates.

(b) Dam that has a high hazard potential means any dam whose failure, in the judgment of the Commission or its authorized representative, might endanger human life or cause significant property damage, or which meets the criteria for high hazard potential as defined by the Corps of Engineers in 33 CFR part 222.

(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;
- (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) The Director of the Office of Energy Projects may, for good cause shown, grant a waiver of the 10 year requirement in paragraph (a)(2) of this section. Any petition for waiver under this paragraph must be filed in accordance with §1.7(b) of this chapter.

[Order 122, 46 FR 9036, Jan. 28, 1981, as amended at 49 FR 29370, July 20, 1984]

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§12.32 General inspection requirement.

In accordance with the procedures in §12.35, the project works of each development to which this subpart applies, excluding transmission and transformation facilities and generating equipment, must be periodically inspected and evaluated by or under the

responsibility and direction of at least one independent consultant, who may be a member of a consulting firm, to identify any actual or potential deficiencies, whether in the condition of those project works or in the quality or adequacy of project maintenance, surveillance, or methods of operation, that might endanger public safety.

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§12.33 Exemption.

(a) Upon written request from the licensee, the Director of the Office of Energy Projects may grant an exemption from the requirements of this subpart in extraordinary 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 except dams that meet the criteria for low hazard potential as defined by the Corps of Engineers in 33 CFR part 222.

[Order 122, 46 FR 9036, Jan. 28, 1981, as amended at 49 FR 29370, July 20, 1984]

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§12.34 Approval of independent consultant.

At least 60 days before the initiation of an inspection under this subpart, the licensee must submit to the Director of the Office of Energy Projects for approval, with a copy to the Regional Engineer, a detailed resume that (a) describes the experience of the independent consultant; and, (b) shows that the consultant is an independent consultant as defined in §12.31(a).

[Order 122, 46 FR 9036, Jan. 28, 1981, as amended at 49 FR 29370, July 20, 1984]

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§12.35 Specific inspection requirements.

(a) Scope of inspection. The inspection by the independent consultant shall include:

(1) Due consideration of 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;

(2) Physical field inspection of the project works and review and assessment of all relevant data concerning:

(i) Settlement;

(ii) Movement;

- (iii) Erosion;
- (iv) Seepage;
- (v) Leakage;
- (vi) Cracking;
- (vii) Deterioration;
- (viii) Seismicity;
- (ix) Internal stress and hydrostatic pressures in project structures or their foundations or abutments;
- (x) The functioning of foundation drains and relief wells;
- (xi) The stability of critical slopes adjacent to a reservoir or project works; and
- (xii) Regional and site geological conditions; and

(3) Specific evaluation of:

- (i) The adequacy of spillways;
 - (ii) The effects of overtopping of nonoverflow structures;
 - (iii) The structural adequacy and stability of structures under all credible loading conditions;
 - (iv) The relevant hydrological data accumulated since the project was constructed or last inspected under this subpart;
 - (v) The history of the performance of the project works through analysis of data from monitoring instruments; and
 - (vi) The quality and adequacy of maintenance, surveillance, and methods of project operations for the protection of public safety.
- (b) Evaluation of spillway adequacy. The adequacy of any spillway must be evaluated by considering hazard potential which would result from failure of the project works during flood flows.
- (1) If structural failure would present a hazard to human life or cause significant property damage, the independent consultant must evaluate the ability of project works to withstand the loading or overtopping which may occur from a flood up to

the probable maximum flood or the capacity of spillways to prevent the reservoir from rising to an elevation that would endanger the project works.

(2) If structural failure would not present a hazard to human life of cause significant property damage, spillway adequacy may be evaluated by means of a design flood of lesser magnitude than the probable maximum flood, if the report of the independent consultant pursuant to §12.37 provides a detailed explanation of the bases for the finding that structural failure would not present a hazard to human life or cause significant property damage.

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§12.36 Emergency corrective measures.

If, in the course of an inspection, an independent consultant discovers any condition for which emergency corrective measures are advisable, 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.

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§12.37 Report of the independent consultant.

(a) General requirement. Following inspection of a project development as required under this subpart, the independent consultant must prepare a report and the licensee must file three copies of that report with the Regional Engineer. The report must conform to the provisions of this section and be satisfactory to the authorized Commission representative.

(b) General information in the initial report. (1) The initial report filed under this subpart for any project development must contain:

- (i) A description of the project development;
- (ii) A map of the region indicating the location of the project development;
- (iii) Plans, elevations, and sections of the principal project works;
- (iv) A summary of the design assumptions, design analyses, spillway design flood, and the factors of safety used to evaluate the structural adequacy and stability of the project works; and
- (v) A summary of the geological conditions that may affect the safety of the project works.

(2) To the extent that the information and analyses required in paragraph (b)(1) of this section, are contained in a report of an independent consultant prepared and filed in

compliance with Commission regulations in effect before March 1, 1981 the information and analyses may be incorporated by specific reference into the first report prepared and filed under this subpart.

(c) Information required for all reports. Any report of an independent consultant filed under this subpart must contain the information specified in this paragraph.

(1) Monitoring information. The report must contain monitoring information that includes time-versus-reading graphs depicting data compiled from any existing critical or representative monitoring instruments that measure the behavior, movement, deflection, or loading of project works or from which the stability, performance, or functioning of the structures may be determined.

(i) Any monitoring data plotted on graphs must be presented in a manner that will facilitate identification and analysis of trends. The data may be summarized to facilitate graphical representation.

(ii) Plan and sectional drawings of project structures sufficient to show the location of all critical or representative existing monitoring instruments must be included. If these drawings have been included in a previous report prepared and filed by an independent consultant, they may be incorporated by specific reference to that earlier report.

(2) Analyses. The report must:

(i) Analyze the safety of the project works and the maintenance and methods of operation of the development fully in light of the independent consultant's reviews, field inspections, assessments, and evaluations described in §12.35;

(ii) Identify any changes in the information and analyses required by paragraph (b) of this section that have occurred since the last report by an independent consultant under this subpart and analyze the implications of those changes; and

(iii) Analyze the adequacy of existing monitoring instruments, periodic observation programs, and other methods of monitoring project works and conditions effecting the safety of the project or project works with respect to the development.

(3) Incorporation by reference. To the extent that conditions, assumptions, and available information have not changed since the last previous report by an independent consultant under this subpart, the analyses required under paragraphs (c) (2)(i) and (ii) of this section may be incorporated by specific reference to the last previous report.

(4) Recommendations. Based on the independent consultant's field observations and evaluations of the project works and the maintenance, surveillance, and methods

of operation of the development, the report must contain the independent consultant's recommendations on:

- (i) Any corrective measures necessary for the structures or for the maintenance or surveillance procedures or methods of operation of the project works;
 - (ii) A reasonable time to carry out each corrective measure; and
 - (iii) Any new or additional monitoring instruments, periodic observations, or other methods of monitoring project works or conditions that may be required.
- (5) Dissenting views. If the inspection and report were conducted and prepared by more than one independent consultant, the report must clearly indicate any dissenting views concerning the analyses or recommendations of the report that might be held by any individual consultant.
- (6) 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 who directed those activities.
- (7) Statement of independence. The independent consultant must declare that all conclusions and recommendations in the report are made independently of the licensee, its employees, and its representatives.
- (8) Signature. The report must be signed by each independent consultant responsible for the report.

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§12.38 Time for inspections and reports.

- (a) General rule. After the initial inspection and report under this subpart for a project development, a new inspection under this subpart must be completed and the report on it filed not later than five years from the date the last report on an inspection was to be filed under this subpart.
- (b) Initial inspection and report. (1) For any development that has a dam that is more than 32.8 feet (10 meters) in height above streambed or impounds an impoundment with a gross storage capacity of more than 2,000 acre feet (2.5 million cubic meters), which development was constructed before the date of issuance of the order licensing or amending a license to include that development, the initial inspection under this subpart must be completed and the report on it filed not later than two years after the date of issuance of the order licensing the development or amending the license to include the development.

(2) For any development that was constructed after the date of issuance of the order licensing or amending a license to include the development, the initial inspection under this subpart must be completed and the report on it filed not later than five years from the date of first commercial operation, or the date on which the impoundment first reaches its normal maximum surface elevation, whichever occurs first.

(3) For any development not set forth in either subparagraph (b)(1) or (b)(2), the initial inspection under this subpart 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 an inspection and report under this subpart are required.

(4) The last independent consultant's inspection and report made for a development before March 1, 1981 in compliance with the Commission's rules then in effect is deemed to fulfill the requirements for an initial inspection and report under this subpart for that development, except that the first report filed under this subpart for that development after March 1, 1981 must contain the information and analyses required by §12.37(b).

(c) Extension of time. For good cause shown, the Regional Engineer may extend the time for filing an independent consultant's report under this subpart.

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§12.39 Taking corrective measures after the report.

(a) Corrective plan and schedule. (1) Not later than 60 days after the report of the independent consultant is filed with the Regional Engineer, the licensee must submit to the Regional Engineer three copies of a plan and schedule for designing and carrying out any corrective measures that the licensee proposes.

(2) 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. Any proposed alternative must be accompanied by the licensee's complete justification and detailed analysis and evaluation in support of that alternative.

(b) 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.

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

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Subpart E—Other Responsibilities of Applicant or Licensee

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§12.40 Quality control programs.

- (a) General rule. During any construction, repair, or modification of project works, including any corrective measures taken pursuant to §12.39 of this part, the applicant or licensee must maintain any quality control program that may be required by the Regional Engineer, commensurate with the scope of the work and meeting any requirements or standards set by the Regional Engineer. If a quality control program is required, the construction, repair, or modification may not begin until the Regional Engineer has approved the program.
- (b) If the construction, repair, or modification work is performed by a construction contractor, quality control inspection must be performed by the licensee, the design engineer, or an independent firm, other than the construction contractor, directly accountable to the licensee. This paragraph is not intended to prohibit additional quality control inspections by the construction contractor, or a firm accountable to the construction contractor, for the construction contractor's purposes.
- (c) If the construction, repair, or modification of project works is performed by the applicant's or licensee's own personnel, the applicant or licensee must provide for separation of authority within its organization to make certain that the personnel responsible for quality control inspection are, to the satisfaction of the Regional Engineer or other authorized Commission representative, independent from the personnel who are responsible for the construction, repair or modification.

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§12.41 Monitoring instruments.

- (a) In designing a project, a licensee must make adequate provision for installing and maintaining appropriate monitoring instrumentation whenever any physical condition that might affect the stability of a project structure has been discovered or is anticipated. The instrumentation must be satisfactory to the Regional Engineer and may include, for example, instruments to monitor movement of joints, foundation or embankment deformation, seismic effects, hydrostatic pore pressures, structural cracking, or internal stresses on the structure.
- (b) If an applicant or licensee discovers any condition affecting the safety of the project or project works during the course of construction or operation, the applicant or licensee must install and maintain any monitoring devices and instruments that may be required by the Regional Engineer or other authorized Commission representative to monitor that condition.

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§12.42 Warning and safety devices.

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.

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§12.43 Power and communication lines and gas pipelines.

- (a) A licensee must take all reasonable precautions, and comply with all reasonable specifications that may be provided by the Regional Engineer, to ensure that any power or communication line or gas pipeline that is located over, under, or in project waters does not obstruct navigation for recreational or commercial purposes or otherwise endanger public safety.
- (b) Clearances between any power or communication line constructed after March 1, 1981 and any vessels using project waters must be at least sufficient to conform to any applicable requirements of the National Electrical Safety Code in effect at the time the power or communication line is constructed.
- (c) The Regional Engineer may require a licensee or applicant to provide signs at or near power or communication lines to advise the public of the clearances for any power or communication lines located over, under, or in project waters.

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§12.44 Testing spillway gates.

- (a) General requirement. An applicant or licensee must make adequate provision, to the satisfaction of the Regional Engineer or other authorized Commission representative, to ensure that all spillway gates are operable at all times, particularly during adverse weather conditions.
- (b) Annual test. (1) At least once each year, each spillway gate at a project must be operated to spill water, either during regular project operation or on a test basis.

(2) If an applicant or licensee does not operate each spillway gate on a test basis during the periodic inspection by the Commission staff, the applicant or licensee must submit to the Regional Engineer at least once each year a written statement, verified in accordance with §12.13, that each spillway has been operated at least once during the twelve months preceding the inspection.

(c) Load-test of standby power. (1) An applicant or licensee must load-test the standby emergency power for spillway gate operation at regular intervals, but not less than once during each year, and submit to the Regional Engineer, at least once each year, a written statement, verified in accordance with §12.13, describing the intervals at which the standby emergency power was load-tested during the year preceding the inspection.

(2) The Commission staff may direct that a spillway gate be operated using standby emergency power during the periodic inspection.

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