

- (i) The adequacy of spillways;
- (ii) The effects of overtopping of non-overflow 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 or 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.

#### § 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.

#### § 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.

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(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 proce-

dures 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.

### § 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