

SUBCHAPTER C: CONSTRUCTION REQUIREMENTS

§§299.21 - 299.33

Effective January 1, 2009

§299.21. Applicability.

(a) This subchapter applies only to construction requirements, including submittal, review, and approval of engineering plans and specifications, inspections, reports, and records, for the construction of a proposed dam or the reconstruction, modification, enlargement, rehabilitation, alteration, or repair of an existing dam:

(1) requiring a water rights permit authorization;

(2) requiring an Edwards Aquifer protection plan;

(3) originally designed and constructed with the assistance and written concurrence of the Natural Resources Conservation Service under authorization of the Flood Control Act of 1944 (as amended), Public Law 78-534, the Watershed Protection and Flood Prevention Act of 1954 (as amended), Public Law 83-566, the pilot watershed program under the Flood Prevention of the Department of Agriculture Appropriation Act of 1954, Public Law 156-67, or Subtitle H of Title XV of the Agriculture and Flood Act of 1981, the Resource Conservation and Development Program, but being proposed to be reconstructed, modified, enlarged, rehabilitated, altered, or repaired without the assistance and written concurrence of the Natural Resources Conservation Service;

(4) used for a pumped storage facility;

(5) used for temporary detention purposes and impounding a maximum storage capacity of 200 acre-feet or more; or

(6) that is small and classified as either significant- or high-hazard, as defined in §299.13 and §299.14 of this title (relating to Size Classification Criteria; and Hazard Classification Criteria; respectively), and exempt from a water rights permit under Texas Water Code, §11.142.

(b) This subchapter does not apply to:

(1) dams for which an exception is approved according to §299.5 of this title (relating to Exception) to the extent for which the exemption is granted;

(2) proposed dams designed and constructed, or existing dams designed and modified, rehabilitated, or repaired, with the assistance and written concurrence of the Natural Resources Conservation Service under authorization of the Flood Control Act of 1944 (as amended), Public Law 78-534, the Watershed Protection and Flood Prevention Act of 1954 (as amended), Public Law 83-566, the pilot watershed program under the Flood Prevention of the Department of Agriculture Appropriation Act of 1954, Public Law 156-67, or Subtitle H of Title XV of the Agriculture and Flood Act of 1981, the Resource Conservation and Development Program;

(3) proposed dams designed and constructed, or existing dams designed and modified, rehabilitated, or repaired for mining purposes and approved and inspected by the Mine Safety and Health Administration;

(4) small, low-hazard dams, as defined in §299.13 and §299.14 of this title, exempted from a water rights permit under Texas Water Code, §11.142; and

(5) maintenance or emergency repairs, as defined in §299.2 of this title (relating to Definitions).

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§299.22. Review and Approval of Construction Plans and Specifications.

(a) General.

(1) The owner shall submit final construction plans and specifications, which are sealed, signed, and dated by a professional engineer, to the executive director for review and approval before commencing construction of a proposed dam or the reconstruction, modification, enlargement, rehabilitation, alteration, or repair of an existing dam. Emergency repairs are defined in §299.2(23) of this title (relating to Definitions) and §299.45 of this title (relating to Emergency Repairs).

(2) The executive director shall not issue approval of final construction plans and specifications for construction of a proposed dam or the reconstruction, modification, enlargement, rehabilitation, alteration, or repair of an existing dam until a water rights permit or an Edwards Aquifer protection plan, if required, is issued.

(3) The executive director shall not issue approval of final construction plans and specifications for construction of a proposed dam or the reconstruction, modification, enlargement, rehabilitation, alteration, or repair of an existing dam unless the plans and specifications include language, or design criteria, that requires the proposed contractor to develop a Storm Water Pollution Prevention Plan and submit a Notice of Intent (NOI) for coverage under the State of Texas Construction General Permit (TXR150000), if applicable.

(4) The owner shall not allow construction of a proposed dam or the reconstruction, modification, enlargement, rehabilitation, alteration, or repair of an existing dam to be commenced before the executive director's review of the final construction plans, specifications, and other engineering reports and the owner receives written approval of the final construction plans and specifications. The owner shall provide a copy of the executive director's written approval to the contractor before commencing construction.

(5) Construction of a proposed dam or the reconstruction, modification, enlargement, rehabilitation, alteration, or repair of an existing dam shall be performed according to the final construction plans and specifications approved by the executive director unless construction change orders have been approved as indicated in §299.26 of this title (relating to Construction Change Orders).

(b) Construction plans.

(1) Construction plans for proposed dams must be 22 inches by 34 inches in size. The plans may be reduced to 11 inches by 17 inches in size if all details are clearly legible and an accurate scale is included. A scale must be included on all sheets of the construction plans. The plans must include the following, as applicable:

(A) a vicinity map that shows the location of the proposed dam and appurtenant structures with respect to:

- (i) boundaries of political subdivisions;
- (ii) streams;
- (iii) highways;
- (iv) railroads;
- (v) pipelines;
- (vi) transmission lines; and
- (vii) utilities;

(B) a topographic map of the dam site with:

- (i) contour intervals not to exceed five feet;
- (ii) latitude and longitude (in decimal degrees to six decimal places) of the midpoint of the dam using the North American Vertical Datum of 1988 conus datum; and

(iii) a superimposed plan of the dam showing the locations of any:

- (I) spillways;
- (II) outlet conduit;
- (III) borings and test pits;
- (IV) possible borrow areas; and
- (V) other structures.

(C) a profile of the dam site taken on the long axis of the dam showing:

- (i) the location of the outlet conduit and each spillway;

(ii) the proposed bottom of the core trench; and

(iii) elevations of all features.

(D) a profile of each spillway along its long axis;

(E) a log of all borings showing the classification of materials encountered below the surface, if not provided in a separate geotechnical report;

(F) a cross section of the dam at maximum section showing complete details and dimensions;

(G) detailed sections of outlet conduits, control works, and spillways with a sufficient number and detail to delineate all of these features;

(H) the proposed location of all permanent instrumentation, pressure cells, settlement plates, piezometers, inclinometers, slope indicator casings, data acquisition systems, or other devices;

(I) the requirements, or design criteria, for the proposed contractor to develop a Storm Water Pollution Prevention Plan and submit a NOI, if applicable, or authorization under TXR150000; and

(J) other design standards as described in the most current version, at the time of the design, of the agency's Design and Construction Guidelines for Dams in Texas.

(2) Construction plans for the reconstruction, modification, enlargement, rehabilitation, alteration, or repair of existing dams must be 22 inches by 34 inches in size. The plans may be reduced to 11 inches by 17 inches in size if all details are clearly legible and an accurate scale is included. A scale must be included on all sheets of the construction plans. The plans must include the following, as applicable:

(A) a vicinity map that shows the location of the dam and spillways with respect to:

(i) boundaries of political subdivisions;

(ii) streams;

(iii) highways;

(iv) railroads;

(v) pipelines;

(vi) transmission lines; and

(vii) utilities.

(B) detailed sections of the dam, spillways, outlet conduit, or control works being enlarged, altered, or repaired with sufficient detail to delineate the work to be performed;

(C) a log of all borings, if necessary, showing the classification of materials encountered below the surface, if not provided in a separate geotechnical report;

(D) the requirements, or design criteria, for the proposed contractor to develop a Storm Water Pollution Prevention Plan and submit a NOI, if applicable or authorization under TXR150000; and

(E) other design criteria as described in the most current version, at the time of the design, of the agency's Design and Construction Guidelines for Dams in Texas.

(c) Specifications. The specifications must include the following:

(1) the requirements for the various types of materials to be used in the construction or reconstruction, modification, enlargement, rehabilitation, alteration, or repair of the dam, spillways, outlet conduits, and control works;

(2) a provision that plans and specifications will not be substantially changed without either written approval of the executive director before the work is started, or notification of the changes as defined in §299.26 of this title;

(3) a requirement that the proposed contractor develop and implement a Storm Water Pollution Prevention Plan, if applicable, and submit an NOI for authorization under TXR150000; and

(4) other design specifications as described in the most current version, at the time of the design, of the agency's Design and Construction Guidelines for Dams in Texas.

(d) Engineering reports and plans.

(1) Engineering reports that may be required by the executive director for review include:

(A) a geotechnical, geological, and structural evaluation report that includes the information described in §299.16 of this title (relating to Structural Evaluation of Dams);

(B) a stability analysis for proposed large- and intermediate-size dams as defined in §299.13 of this title (relating to Size Classification Criteria), and large- and intermediate-size dams that are proposed to be reconstructed or structurally modified, enlarged, rehabilitated, or altered, as described in §299.16 of this title;

(C) a hydrologic and hydraulic report for proposed dams and dams that are to be reconstructed, modified, enlarged, rehabilitated, altered, or repaired, that includes the information described in the most current version, at the time of the analysis, of the agency's Hydrologic and Hydraulic Guidelines for Dams in Texas;

(D) a report on proposed instrumentation for proposed large dams and existing large dams, as defined in §299.13 of this title, that are to be reconstructed, modified, enlarged, rehabilitated, altered, or repaired. This report must include:

- (i) types and locations of proposed instrumentation;
- (ii) depths of instrumentation; and
- (iii) frequency and duration of data collection.

(E) any reports prepared for addressing site-specific conditions and recommendations.

(2) Engineering plans that may be required by the executive director for review include:

(A) a quality control and assurance plan for all proposed dams. This plan must include:

- (i) designation and qualifications of the on-site inspector(s);
- (ii) designation of a testing laboratory;
- (iii) types and frequency of tests to be conducted; and
- (iv) a construction schedule.

(B) a plan for closure of any proposed dam that requires a closure section. This plan must include:

- (i) the percentage of construction work that will be completed or the amount of construction that would be completed before closure would start;
- (ii) the sequence to be followed during closure; and
- (iii) the estimated time to complete closure.

(C) a plan for addressing possible emergencies that threaten the integrity of the dam for all proposed high- and significant-hazard dams during construction. This plan must include:

- (i) a flow chart for notification of emergency management officials and the downstream public;
- (ii) identification of possible emergencies that could occur during construction and potential consequences;
- (iii) technical requirements for addressing any possible emergencies; and

(iv) responsibilities of all parties.

(e) Review and approval process.

(1) The executive director shall review the final construction plans, specifications, and engineering reports and plans according to the most current version, at the time of the design, of the agency's Design and Construction Guidelines for Dams in Texas.

(2) If the final construction plans and specifications meet the requirements of this chapter and accepted engineering practices, the executive director shall issue written approval to the owner unless the plans and specifications are for a proposed dam and have been submitted as part of the application for a water rights permit or for an Edwards Aquifer protection plan.

(A) If the final construction plans and specifications are for a proposed dam and have been submitted as part of the application for a water rights permit, the executive director shall advise the owner that the plans and specifications meet the requirements of this chapter and accepted engineering practices. However, the executive director shall not issue written approval of the final construction plans and specifications until the water rights permit is issued and a time limitation section, in compliance with Texas Water Code, Chapter 11, has been added to the water rights permit requiring construction of a proposed dam or the reconstruction, modification, enlargement, rehabilitation, alteration, or repair of an existing dam to be started and completed within specified time frames.

(B) If the final construction plans and specifications are for a proposed dam and have been submitted as part of the application for an Edwards Aquifer protection plan, the executive director shall not issue written approval of the final construction plans and specifications until the Edwards Aquifer protection plan is issued by the appropriate regional office.

(3) If the final construction plans and specifications do not meet the requirements of this chapter, the executive director shall provide the owner written comments on the items needing revision.

(4) After receipt of the revised final construction plans and specifications or an addendum to the plans and specifications, the executive director shall review and issue written approval to the owner if all requirements in this chapter and accepted engineering practices have been met.

(5) If all requirements still have not been met, the executive director shall either provide the owner written comments on the items still needing revision or schedule a meeting with the owner to discuss the items needing revision.

(6) Upon submission of the revised, and agreed on, final construction plans and specifications or an addendum to the plans and specifications, the executive director shall issue written approval to the owner if applicable rules and accepted engineering practices have been met.

(f) Time limitations after approval of final construction plans and specifications.

(1) If construction of a proposed dam or the reconstruction, modification, enlargement, rehabilitation, alteration, or repair of an existing dam is not commenced within four years of the executive

director's approval of final construction plans and specifications, the approval will be subject to reevaluation. If rules, regulations, and accepted engineering practices or the downstream hazard classification have changed during the four-year period, the approval may be considered invalid regardless of any extension of time authorizations given according to Chapter 295 of this title (relating to Water Rights, Procedural) and Chapter 297 of this title (relating to Water Rights, Substantive).

(2) If the executive director determines that the approval is invalid, the executive director shall notify the owner in writing that new construction plans, specifications, and other engineering reports must be submitted before the work may commence.

(3) The new construction plans and specifications must meet the requirements of the rules and regulations in effect at the time of the reevaluation.

Adopted December 10, 2008

Effective January 1, 2009

§299.23. Maintenance of Construction Records.

(a) The owner shall maintain construction records during construction of a proposed dam or the reconstruction, modification, enlargement, rehabilitation, alteration, or repair of an existing dam, which include:

- (1) approved construction plans and specifications;
- (2) approved construction change orders;
- (3) construction test results as described in subsection (b) of this section;
- (4) approval letters; and

(5) construction inspection reports and other engineering reports that may be developed during construction.

(b) The owner shall furnish copies of the construction test results for high- and significant-hazard dams to the executive director for review at least once a month during the construction period to document compliance with the approved plans and specifications and the requirements in this chapter. The test results to be submitted must include, as applicable:

- (1) soil moisture-density test results;
- (2) soil dispersion test results; and
- (3) concrete trial batch design test and compression test results.

(c) The owner shall also record, as applicable:

- (1) final bottom width and elevations of core and cutoff trenches;

(2) structural excavations;

(3) documentation of permanent sheet piles or bearing piles; and

(4) documentation of foundation grouting, de-watering problems, or observations during the construction period of any instruments installed to measure movements, stresses, and pore pressure.

(d) The owner shall maintain the construction records as described in subsections (a) - (c) of this section in a secure location at the construction site or at a location designated by the owner that is immediately accessible to the owner until the completion of construction.

(e) After completion of construction, the owner shall transfer the construction records in subsections (a) - (c) of this section to a permanent, secure location designated by the owner that is immediately accessible to the owner as described in §299.46 of this title (relating to Records).

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§299.24. Construction Progress Reports.

(a) The owner shall have a professional engineer provide the following information to the executive director in writing within ten working days after construction on the dam commences:

(1) the actual start date;

(2) the contractor's name and address; and

(3) the name and telephone number of the professional engineer or inspector that will be on site during construction.

(b) The owner shall have a professional engineer submit monthly reports of progress on high- and significant-hazard dams to the executive director during construction. The report must include:

(1) the work accomplished during the month;

(2) the percent of the contract time used;

(3) the percentage of completion of the project on the date of the report;

(4) a description of problem areas encountered during construction;

(5) the dates of the reporting period; and

(6) any changes in the contact information.

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§299.25. Construction Inspection.

(a) The owner shall have a professional engineer, or a qualified inspector, provided the inspector is under the direct supervision of the owner's professional engineer, conduct inspections of the construction work to determine if the work is in compliance with approved construction plans, specifications, and accepted engineering practices.

(b) The executive director may make periodic inspections of the construction to determine if the dam is in compliance with approved plans and specifications. If the executive director's inspection reveals that the dam is not being constructed according to the approved construction plans and specifications, the executive director shall notify the owner by telephone and in writing as outlined in the most current version, at the time of the evaluation, of the agency's Design and Construction Guidelines for Dams in Texas of the deficiency items or violations noted. The executive director shall direct the owner to take the necessary action to bring the project into compliance with the approved plans and specifications within 30 days after being notified.

(c) The owner, at the owner's expense, shall submit documentation of the work or tests performed or sufficient information to enable the executive director to determine if conformity with approved plans and specifications is accomplished.

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§299.26. Construction Change Orders.

(a) The owner shall submit any proposed changes to the approved construction plans and specifications to the executive director for review and approval as a construction change order as defined in §299.2(13) of this title (relating to Definitions). The construction change order must be signed, sealed, and dated by a professional engineer.

(b) The owner shall submit a construction change order before work starts on the proposed changes, if possible. If there is an emergency requiring immediate action, a construction change order may be submitted after the work is performed. However, the owner or the owner's professional engineer shall inform the executive director by telephone or electronic mail of the action being taken as soon as the situation allows, but no later than 24 hours after becoming aware of the emergency or the need for a change order. If the time needed for an approval of a change order will require that the construction be halted, the work may be performed once the construction change order is signed, sealed, and dated by the owner's professional engineer and submitted for review. However, if the construction change order is not approved, the owner shall be responsible for having any work performed or modified to reflect the approved construction change order, as needed.

(c) The executive director shall review a construction change order according to the most current version, at the time of the review, of the agency's Design and Construction Guidelines for Dams in Texas.

(d) The executive director may request that the owner submit a construction change order if, during construction, the executive director finds that changes to the construction plans and specifications

are necessary to ensure the integrity of the dam.

(e) If the proposed construction change order would result in a change in the permitted water rights, the owner shall submit an application for an amendment of the water rights permit.

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Effective January 1, 2009

§299.27. Closure of Dam.

(a) The owner shall have a professional engineer submit a written request to close the dam to the executive director for approval as described in the most current version, at the time of the closure, of the agency's Design and Construction Guidelines for Dams in Texas before beginning closure of the dam. The request must include:

(1) a copy of the owner's emergency action plan; and

(2) documentation that all parts of the proposed plan for closure of the dam, as described in §299.22(d)(2)(B) of this title (relating to Review and Approval of Construction Plans and Specifications), have been met.

(b) The owner may begin closure of the dam after receiving written approval from the executive director.

(c) If appropriate, the owner shall notify the executive director in writing that the gate operation plan has been completed with the request for closure of the dam as described in §299.32 of this title (relating to Gate Operation Plan).

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Effective January 1, 2009

§299.28. Deliberate Impoundment.

(a) The owner of a dam and reservoir designed to impound more than 1,000 acre-feet at normal storage capacity shall submit a written request to the executive director to begin deliberate impoundment of water, as defined in §299.2(17) of this title (relating to Definitions). The owner shall submit a letter from the owner's professional engineer stating that the dam is substantially complete.

(b) The owner may begin deliberate impoundment after receiving written approval from the executive director.

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Effective January 1, 2009

§299.29. Notification of Completion.

(a) The owner shall have the professional engineer of record submit written notification, which is sealed, signed, and dated, to the executive director within 45 calendar days after the work is substantially completed on the construction of a proposed dam or the reconstruction, modification, enlargement,

rehabilitation, alteration, or repair of an existing dam. This notification may be submitted separately from the record drawings.

(b) The owner's professional engineer shall state that, to the best of the professional engineer's knowledge, the construction or reconstruction, modification, enlargement, rehabilitation, alteration, or repair was completed in substantial compliance with the approved plans and specifications and any approved construction change orders.

(c) For projects excepted under §299.5 of this title (relating to Exception), the owner shall notify the executive director in writing that construction or reconstruction, modification, enlargement, rehabilitation, alteration, or repair was completed.

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§299.30. Record Drawings.

(a) Within six months after final completion of construction, the owner shall submit to the executive director a complete set of record drawings of the project for filing with the permanent records. These record drawings must show all revisions made during construction, including the permanent reference mark(s); be sealed, signed, and dated by the professional engineer; and be identified as final record drawings.

(b) If no changes were made during construction, the owner may submit in writing a statement, which is signed, sealed, and dated by the professional engineer, that no changes were made during construction.

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Effective January 1, 2009

§299.31. Permanent Reference Mark.

The owner of a proposed dam or a dam proposed to be reconstructed, modified, enlarged, rehabilitated, altered, or repaired shall have the professional engineer of record establish one or more permanent reference mark(s) for future use near, but separate from, the project. Accurate location(s) and elevation(s) above mean sea level for the permanent reference mark(s) must be shown on the record drawings. Horizontal and vertical measurements recorded with a global positioning system (GPS) receiver must be based on the North American Datum of 1983 and the North American Vertical Datum of 1988 horizontal and vertical reference datums. Elevation data must be recorded using a survey instrument or survey grade GPS receiver. Latitude and longitude measurements must be provided in decimal degrees to six decimal places.

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§299.32. Gate Operation Plan.

The owner shall have a professional engineer develop a gate operation plan, as described in §299.44(c) of this title (relating to Gate Operation Plan), for the owner of a proposed dam with a gated principal spillway before completion of construction.

Adopted December 10, 2008

Effective January 1, 2009

§299.33. Operation and Maintenance.

(a) The owner shall develop operation and maintenance procedures as described in §299.43 of this title (relating to Operation and Maintenance) for all proposed dams before completion of construction.

(b) If applicable, the owner shall provide the date that the owner will turn over the operation and maintenance of the dam to a property owner association, homeowner association, or other designated group and the new contact information in writing to the executive director.

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