

SUBCHAPTER A: GENERAL PROVISIONS
§§299.1 - 299.7
Effective January 1, 2009

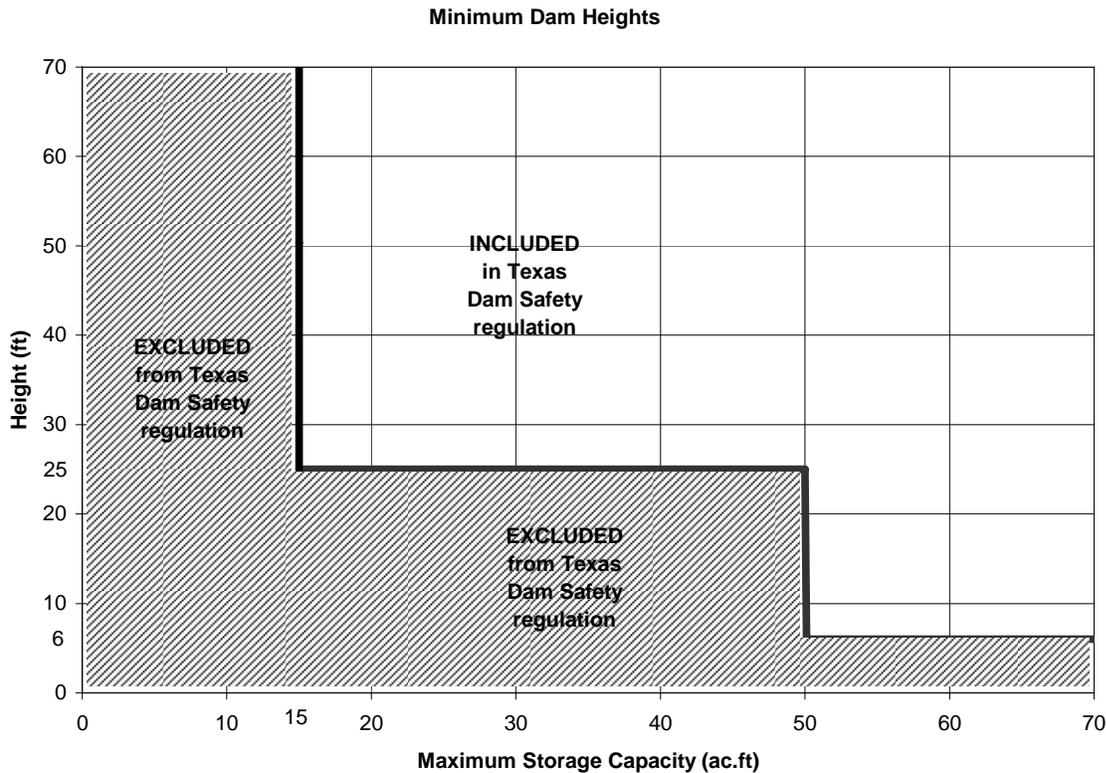
§299.1. Applicability.

(a) This chapter applies to design, review, and approval of construction plans and specifications; and construction, operation and maintenance, inspection, repair, removal, emergency management, site security, and enforcement of dams that:

(1) have a height greater than or equal to 25 feet and a maximum storage capacity greater than or equal to 15 acre-feet, as described in paragraph (2) of this subsection;

(2) have a height greater than six feet and a maximum storage capacity greater than or equal to 50 acre-feet;

Figure: 30 TAC §299.1(a)(2)



(3) are a high- or significant-hazard dam as defined in §299.14 of this title (relating to

Hazard Classification Criteria), regardless of height or maximum storage capacity; or

(4) are used as a pumped storage or terminal storage facility.

(b) This chapter provides the requirements for dams, but does not relieve the owner from meeting the requirements in Texas Water Code (TWC), Chapter 11, and Chapters 213, 295, and 297 of this title (relating to Edwards Aquifer; Water Rights, Procedural; and Water Rights, Substantive; respectively). All applicable requirements in those chapters will still apply.

(c) This chapter does not apply to:

(1) dams designed by, constructed under the supervision of, and owned and maintained by federal agencies such as the Corps of Engineers, International Boundary and Water Commission, and the Bureau of Reclamation;

(2) embankments constructed for roads, highways, and railroads, including low-water crossings, that may temporarily impound floodwater, unless designed to also function as a detention dam;

(3) dikes or levees designed to prevent inundation by floodwater;

(4) off-channel impoundments authorized by the commission under TWC, Chapter 26;
and

(5) above-ground water storage tanks (steel, concrete, or plastic).

(d) All dams must meet the requirements in this chapter, including dams that do not require a water right permit, other dams that are exempt from the requirements in Subchapter C of this chapter (relating to Construction Requirements), and dams that are granted an exception as defined in §299.5 of this title (relating to Exception).

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§299.2. Definition.

The following words and terms in this section are in addition to the definitions in §3.2 of this title (relating to Definitions). The words and terms in this section, when used in this chapter, have the following meanings.

(1) **Abandon**--The owner no longer maintaining a dam for a period of ten years, or refusing to maintain the dam.

(2) **Accepted engineering practices**--The application of design and analysis methods that are commonly used by professional engineers in their field of expertise and are well documented in published design manuals, codes of practice, text books, and engineering journals.

(3) **Alteration**--Any change to a dam or appurtenant structures that affects the integrity,

safety, and operation of the dam, including, but not limited to:

(A) changing the height of a dam;

(B) increasing the normal pool or principal spillway elevation, or changing the hydraulic capability of the principal spillway; or

(C) changing the original elevation, physical dimensions, or hydraulic capability of an emergency spillway.

(4) **Appurtenant structures**--The outlet works and controls, spillways and controls, gates, valves, siphons, access structures, bridges, berms, drains, hydroelectric facilities, instrumentation, and other structures related to the operation of a dam.

(5) **Breach**--An excavation or opening, either controlled or a result of a failure of the dam, through a dam or spillway that is capable of completely draining the reservoir down to the approximate original topography so the dam will no longer impound water, or partially draining the reservoir to lower impounding capacity.

(6) **Breach analysis**--The analysis of potential dam failure scenarios, including overtopping and piping (magnitude, duration, and location), using accepted engineering practices, to evaluate downstream hazard potential or to develop inundation maps.

(7) **Breach inundation area**--An area that would be flooded as a result of a dam failure.

(8) **Closure of dam**--The commencement of placing material within the closure section of the dam.

(9) **Closure section**--The section of the dam left open during construction of a proposed dam in order to pass floodwaters through the dam without endangering the dam.

(10) **Commence construction**--An actual, visible activity beyond planning or land acquisition that initiates the beginning of the construction of a dam in the manner specified in the approved construction plans and specifications for that dam. The action must be performed in good faith with the intent to continue with the construction through completion.

(11) **Conceptual design**--A design that presents a location and proposed plan of the dam and appurtenant structures and elevations of all pertinent features of the dam.

(12) **Construction**--Building a proposed dam and appurtenant structures capable of storing water.

(13) **Construction change order**--A document recommended by the owner's professional engineer and signed by the owner's contractor and the owner that authorizes a significant addition, deletion, or revision of the approved construction plans and specifications that has a material impact on the safety and integrity of the dam.

(14) **Dam**--Any barrier or barriers, with any appurtenant structures, constructed for the purpose of either permanently or temporarily impounding water.

(15) **Dam failure**--breach and uncontrolled release of the reservoir.

(16) **Deficient dam**--A dam that fails to meet the requirements of this chapter and poses a significant threat to human life or property.

(17) **Deliberate impoundment**--The intentional impoundment of water in the reservoir, including:

(A) closing the lowest planned outlet or spillway;

(B) blocking the diversion works that are used during construction to divert water around the construction area; and

(C) beginning the closure of the dam.

(18) **Design flood**--The flood used in the design and evaluation of a dam and appurtenant structures, particularly for determining the size of spillways, outlet works, and the effective crest of the dam.

(19) **Detention dam**--A dam that has an impoundment that is normally dry and has an ungated outlet structure that is designed to completely drain the water impounded during a flood within five days.

(20) **Drawdown**--The change in surface elevation of a reservoir due to a withdrawal of water from the reservoir.

(21) **Effective crest of the dam**--The elevation of the lowest point on the crest (top) of the dam, excluding spillways.

(22) **Emergency action plan**--A written document prepared by the owner or the owner's professional engineer describing a detailed plan to prevent or lessen the effects of a failure of the dam or appurtenant structures.

(23) **Emergency repairs**--Any repairs, considered to be temporary in nature, necessary to preserve the integrity of the dam and prevent a possible failure of the dam.

(24) **Emergency spillway**--An auxiliary spillway designed to pass a large, but infrequent, volume of flood flow, with a crest elevation higher than the principal spillway or normal operating level.

(25) **Engineering inspection**--Inspection performed by a professional engineer, or under the supervision of a professional engineer, to evaluate the condition, safety, and integrity of the dam and appurtenant structures to determine if the dam and appurtenant structures meet applicable rules and

accepted engineering practices, including a field inspection and review of records for design, construction, and performance.

(26) **Enlargement**--Any change in, or addition to, an existing dam or reservoir that raises, or may raise, the normal storage capacity of the reservoir impounded by the dam.

(27) **Existing dam**--Any dam under construction or completed as of the effective date of these rules.

(28) **Fetch**--The straight-line distance across a reservoir subject to wind forces.

(29) **Hazard classification**--A measure of the potential for loss of life, property damage, or economic impact in the area downstream of the dam in the event of a failure or malfunction of the dam or appurtenant structures. The hazard classification does not represent the physical condition of the dam.

(30) **Height of dam**--The difference in elevation between the natural bed of the watercourse or the lowest point on the downstream toe of the dam, whichever is lower, and the effective crest of the dam.

(31) **Inundation map**--A map delineating the area that would be flooded by a particular flood event, or a dam failure.

(32) **Loss of life**--Human fatalities that would result from a failure of the dam, without considering the mitigation of loss of life that could occur with evacuation or other emergency actions .

(33) **Main highways**--Roads classified as a rural arterial system by the Texas Department of Transportation, including interstate highways, United States highways, and state highways.

(34) **Maintenance**--Those tasks that are generally recurring and are necessary to keep the dam and appurtenant structures in a sound condition, free from defect or damage that could hinder the dam's functions as designed, including adjacent areas that also could affect the function and operation of the dam.

(35) **Maintenance inspection**--Visual inspection of the dam and appurtenant structures by the owner or owner's representative to detect apparent signs of deterioration, other deficiencies, or any other areas of concern.

(36) **Maximum storage capacity**--The volume, in acre-feet, of the impoundment created by the dam at the effective crest of the dam. For purposes of calculating maximum storage capacity for the Inventory of Dams as described in §299.7 of this title (relating to Inventory of Dams), only water that can be stored above natural ground level (not in excavations in the reservoir) or that could be released by a failure of the dam is considered in assessing the storage volume. The maximum storage capacity may decrease over time due to sedimentation or increase if the reservoir is dredged.

(37) **Minimum freeboard**--The difference in elevation between the effective crest of the dam and the maximum water surface elevation resulting from routing the design flood appropriate for the

dam.

(38) **Minor highways**--Roads classified as a rural collector road or rural local road by the Texas Department of Transportation, including county roads and Farm-to-Market roads not used to provide service to schools.

(39) **Modification**--Any structural alteration of a dam, the spillways, the outlet works, or other appurtenant structures that could influence or affect the integrity, safety, and operation of the dam.

(40) **Normal storage capacity**--The volume, in acre-feet, of the impoundment created by the dam at the lowest uncontrolled spillway crest elevation, or at the maximum elevation of the reservoir at the normal (non-flooding) operating level.

(41) **NAD83 conus datum**--The North American Datum of 1983 is a reference system used to obtain the spherical coordinates of a point on the earth's surface. The standard North American Datum of 1983, or any future updates, must be used for all latitude and longitude measurements.

(42) **NAVD88 datum**--The North American Vertical Datum of 1988 is a reference system used to obtain vertical measurements on the earth's surface. The North American Vertical Datum of 1988 must be used for all vertical measurements recorded with a global positioning system receiver.

(43) **Outlet**--A conduit or pipe controlled by a gate or valve, or a siphon, that is used to release impounded water from the reservoir.

(44) **Owner**--Any person who can be one or more of the following:

(A) holds legal possession or ownership of an interest in a dam;

(B) is the fee simple owner of the surface estate of the tract of land on which the dam is located if actual ownership of the dam is uncertain, unknown, or in dispute unless the person can demonstrate by appropriate documentation, including a deed reservation, invoice, bill of sale, or by other legally acceptable means that the dam is owned by another person or persons;

(C) is a sponsoring local organization that has an agreement with the Natural Resources Conservation Service for a dam constructed under the authorization of the Flood Control Act of 1944 (as amended), Public Law 78-534, the Watershed Protection and Flood Prevention Act, 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; or

(D) has a lease, easement, or right-of-way to construct, operate, or maintain a dam.

(45) **Piping**--The progressive removal of soil particles from a dam by percolating water, leading to development of channels or flow paths.

(46) **Principal spillway**--The primary or initial spillway engaged during a rainfall runoff event that is designed to pass normal flows.

(47) **Probable maximum flood (PMF)**--The flood magnitude that may be expected from the most critical combination of meteorologic and hydrologic conditions that are reasonably possible for a given watershed.

(48) **Probable maximum precipitation (PMP)**--The theoretically greatest depth of precipitation for a given duration that is physically possible over a given size storm area at a particular geographical location at a certain time of the year.

(49) **Professional engineer**--An individual licensed by the Texas Board of Professional Engineers to engage in the practice of engineering in the state of Texas, with experience in the investigation, design, construction, repair, and maintenance of dams.

(50) **Proposed dam**--Any dam not yet under construction.

(51) **Pumped storage dam**--A rectangular or circular embankment used to store water pumped from another source.

(52) **Reconstruction**--Removal and replacement of an existing dam or appurtenant structures.

(53) **Rehabilitation**--The completion of all work necessary to extend the service life of a dam and meet the safety and performance standards of this chapter.

(54) **Removal**--The complete elimination of a dam, the appurtenant structures, and the reservoir to the extent that no water can be impounded by the dam or reservoir and the approximate original topography of the dam and reservoir area is restored.

(55) **Repairs**--Any work done on a dam that may affect the integrity, safety, and operation of the dam, including, but not limited to:

(A) excavation into the embankment fill or foundation of a dam; or

(B) removal or replacement of major structural components of a dam or appurtenant structures.

(56) **Reservoir**--A body of water impounded by a dam.

(57) **Safe manner**--Operating and maintaining a dam in sound condition, free from defect or damage that could hinder the dam's functions as designed.

(58) **Seal**--To affix a professional engineer's seal to each sheet of construction plans or to an engineering report or required document.

(59) **Secondary highways**--Roads classified as a rural major collector road by the Texas Department of Transportation, including Farm-to-Market roads used to provide service to schools.

(60) **Secure location**--A building that is locked and accessible to the owner and owner's representative.

(61) **Spillway**--An appurtenant structure that conducts outflow from a reservoir.

(62) **Sponsoring local organization**--any political subdivision of the state, or other entity, with the authority to carry out, maintain, or operate work of improvement installed with the assistance of the federal government.

(63) **Stability analysis**--The analytical procedure for determining the most critical factor of safety for a slope.

(64) **Substantially complete**--A dam under construction that is complete except for minor correction of items identified in the final construction inspection and that can be operated in a safe manner to the dam's full functional capability.

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§299.3. General.

(a) As part of an evaluation to determine if the dam and appurtenant structures constitute a significant threat to human life or property, the executive director may require the owner to obtain the services of an independent team of professional engineers or other dam experts, at the owner's expense, to determine the adequacy of the design, construction, or operation of the dam if safety considerations warrant an independent review. The requirements for use of the independent team of professional engineers or other dam experts will be included in a guideline developed by the executive director. The executive director shall submit the requirement in writing to the owner and shall provide a list of engineers and other dam experts. The owner shall submit the qualifications and size of the team to the executive director for any comments prior to beginning the independent review.

(b) When an owner submits an application for a water rights permit to either construct a dam, reconstruct, modify, enlarge, rehabilitate, alter, or repair an existing dam, or authorize an existing dam without making any changes to the dam, the owner shall submit the following:

(1) a conceptual design of the construction for a proposed dam and appurtenant structures, or proposed reconstruction, modification, enlargement, rehabilitation, alteration, or repair of an existing dam;

(2) the geotechnical, hydrologic, and hydraulic reports for the proposed site, if the reports have been completed; and

(3) other pertinent information on an existing dam using a form provided by the executive director.

(4) The executive director shall provide a technical review of these documents as described in §281.19 of this title (relating to Technical Review)

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§299.4. Professional Engineer.

(a) For all dams subject to the executive director's review under this chapter, a professional engineer shall:

- (1) prepare all plans and specifications;
- (2) prepare evaluations, analyses, or reports required by this chapter;
- (3) observe the progress and the quality of the construction of proposed dams or reconstruction, modification, enlargement, rehabilitation, alteration, repair, or removal of existing dams to determine, in general, if the construction is proceeding according to the approved construction plans and specifications. It is understood that the professional engineer is not responsible for the contractor's means, methods, techniques, sequences, or procedures of construction selected by the contractor, or the safety precautions and programs incident to the work of the contractor; and
- (4) either perform or supervise engineering inspections, as defined in §299.2 of this title (relating to Definitions), of high- and significant-hazard dams and large, low-hazard dams, as defined in §299.13 and §299.14 of this title (relating to Size Classification Criteria; and Hazard Classification Criteria; respectively).

(b) The executive director may waive these requirements based on §299.5 of this title (relating to Exception).

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§299.5. Exception.

(a) The executive director may grant an exception to any or all of paragraphs (1) - (9) of this subsection if the executive director determines that the physical conditions involved or consequences of potential failure, when evaluated using accepted engineering practices, make the requirements unnecessary:

- (1) §299.4 of this title (relating to Professional Engineer);
- (2) §299.22 of this title (relating to Review and Approval of Construction Plans and Specifications);
- (3) §299.23 of this title (relating to Maintenance of Construction Records);

- (4) §299.24 of this title (relating to Construction Progress Reports);
- (5) §299.25 of this title (relating to Construction Inspection);
- (6) §299.26 of this title (relating to Construction Change Orders);
- (7) §299.28 of this title (relating to Deliberate Impoundment);
- (8) §299.30 of this title (relating to Record Drawings); and
- (9) §299.31 of this title (relating to Permanent Reference Mark).

(b) The owner shall submit the request for an exception in writing to the executive director. The request may include:

- (1) cost-benefit analyses;
- (2) detailed engineering studies prepared by a professional engineer; and
- (3) any other pertinent information.

(c) The executive director's decision to approve or deny the request for an exception must be in writing and specify the extent of the exception granted or denied and the executive director's reasons for granting or denying the exception.

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§299.6. Changing Ownership of Dams.

When there is a change in ownership of the property that includes a dam, the current owner shall include notification to the new owner in the transaction that the new owner shall notify the executive director in writing within 90 days following the transaction and provide:

- (1) the name, address, and telephone number of the new owner(s);
- (2) the date of ownership transfer;
- (3) the name and telephone number of the individual who will be responsible for operation and maintenance of the dam; and
- (4) a certified copy or photocopy of instruments recorded in the office of the county clerk showing transfer of the dam and property on which the dam is located to a new owner.

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§299.7. Inventory of Dams.

The executive director shall maintain an inventory of dams that includes information on:

- (1) ownership;
- (2) physical dimensions of the dam;
- (3) hazard classification;
- (4) normal and maximum storage capacity;
- (5) use of reservoir, including the water rights permit, if applicable;
- (6) inspection date;
- (7) location; and
- (8) condition of the dam.

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