

Chapter 5a Dam Safety

Part 1 General Provisions

73-5a-101 Power of state engineer to regulate dams.

- (1) The state engineer has the authority to regulate dams for the purpose of protecting public safety.
- (2) To protect life and property, the state engineer may make rules controlling the construction and operation of dams, including rules controlling:
 - (a) design;
 - (b) maintenance;
 - (c) repair;
 - (d) removal; and
 - (e) abandonment.
- (3) The state engineer may by rule exempt from this chapter any dam that:
 - (a) impounds less than 20 acre-feet of water and does not constitute a threat to human life if it fails; or
 - (b) does not constitute a threat to human life and would result in only minor damage to property of the owner if it fails.

Enacted by Chapter 319, 1990 General Session

73-5a-102 Chapter does not apply to certain federal dams and reservoirs.

This chapter does not apply to works owned by the United States Bureau of Reclamation. However, the Bureau of Reclamation shall file plans, drawings, and specifications of its works with the state engineer.

Amended by Chapter 264, 1996 General Session

73-5a-103 Liability of owner or operator.

- (1) Nothing in this chapter shall be construed to relieve an owner or operator of a dam or reservoir of the legal duties, obligations, or liabilities incident to the ownership or operation of the dam or reservoir.
- (2) The owner or operator of a dam or reservoir may not be held to be strictly liable for any act or omission incident to the construction, ownership, or operation of the dam or reservoir.

Amended by Chapter 264, 1996 General Session

73-5a-104 Qualifications of persons designing dams.

Each plan for the construction, enlargement, repair, alteration, or removal of any dam in this state shall be prepared by a qualified engineer who is:

- (1) licensed in Utah; and
- (2) experienced in dam design and construction.

Enacted by Chapter 319, 1990 General Session

73-5a-105 Independent consultants -- Owner to pay costs.

- (1) The state engineer may require the owner of a dam or proposed dam to obtain the services of an independent consultant or team of consultants approved by the state engineer to consult regarding the adequacy of the design, construction, or operation of the dam if safety considerations pertaining to the design, construction, or operation of the dam warrant an independent review.
- (2) The state engineer shall make rules specifying:
 - (a) the safety considerations that will be considered in determining if an independent review is required;
 - (b) the requisite qualifications and experience of the independent consultants; and
 - (c) the timing of the consultants' review so that their recommendations are made in a timely manner.
- (3)
 - (a) The independent consultants shall be considered to be the agents of the owner of the dam.
 - (b) The costs of the independent consultants' services shall be paid by the owner of the dam.
 - (c) The owner of the dam may require the independent consultants to consider other issues, in addition to safety considerations, such as:
 - (i) design selections or alternatives;
 - (ii) site selection;
 - (iii) cost effectiveness; or
 - (iv) other tasks as defined by the contract.

Enacted by Chapter 319, 1990 General Session

73-5a-106 Dams classified according to hazard and use.

- (1) Dams shall be classified according to hazard and use.
- (2) Hazard classifications are as follows:
 - (a) high hazard - those dams which, if they fail, have a high probability of causing loss of human life or extensive economic loss, including damage to critical public utilities;
 - (b) moderate hazard - those dams which, if they fail, have a low probability of causing loss of human life, but would cause appreciable property damage, including damage to public utilities; and
 - (c) low hazard - those dams which, if they fail, would cause minimal threat to human life, and economic losses would be minor or limited to damage sustained by the owner of the structure.
- (3) Use classifications are as follows:
 - (a) water storage - dams which impound water for prolonged periods, including those built for irrigation, power generation, water supply, aquatic culture, and recreation;
 - (b) flood control - dams constructed to operate only during significant runoff events and which impound water for a small percentage of time, including those built for flood control or sediment control and debris basins;
 - (c) tailings - dams in which a large component of the material impounded consists of saturated solids; and
 - (d) other - dams which impound a minimal amount of water or where the head behind the dam is minimal, including stock ponds, wash water ponds, recirculated process water ponds, regulating reservoirs, and diversion dams.

Amended by Chapter 264, 1996 General Session

Part 2

Procedures for the Approval of Dam Construction Plans

73-5a-201 Approval of state engineer necessary to construct, alter, or abandon dams.

No person may construct, enlarge, repair, alter, remove, or abandon any dam or reservoir without obtaining written approval from the state engineer. Routine maintenance of the structure does not require approval from the state engineer.

Enacted by Chapter 319, 1990 General Session

73-5a-202 Submission of plans.

- (1) Before a dam is constructed, enlarged, repaired, altered, removed, or abandoned, plans for the work shall be submitted to the state engineer for his approval, unless the dam:
 - (a) impounds less than 20 acre-feet of water; and
 - (b) is not classified as a high hazard structure under Section 73-5a-106.
- (2)
 - (a) The plans shall be submitted 90 days before:
 - (i) awarding the construction contract; or
 - (ii) the commencement of construction, if the owner constructs the dam.
 - (b) The state engineer may shorten the 90-day review period if the owner and the design engineer submit satisfactory preliminary plans and design reports for review.
- (3) The state engineer may waive the requirement of plans if it can be demonstrated that failure of the proposed dam:
 - (a) does not constitute a threat to human life; and
 - (b) may result in only minor property damage that would be limited to property held by the owner of the structure.

Amended by Chapter 177, 2009 General Session

73-5a-203 Review of plans.

- (1) The state engineer shall establish a formal written procedure for the review of plans submitted pursuant to Section 73-5a-202. Plans shall be reviewed according to:
 - (a) design criteria which the state engineer shall specify in rules; and
 - (b) data or criteria generally accepted by the general dam design community.
- (2) Upon review of the plans, the state engineer will:
 - (a) approve them with appropriate conditions;
 - (b) reject them; or
 - (c) return them for correction.
- (3) The state engineer shall document each review indicating:
 - (a) how the plans were reviewed; and
 - (b) his evaluation of the plans.

Enacted by Chapter 319, 1990 General Session

73-5a-204 Application for approval.

- (1) If the submission of plans is not required by Subsection 73-5a-202(1) or is waived pursuant to Subsection 73-5a-202(3), approval to construct, enlarge, repair, alter, remove, or abandon the dam must be obtained by submitting an application to the state engineer.
- (2) The application shall contain:
 - (a) the location of the dam;
 - (b) physical dimensions of the dam;
 - (c) water rights attached to the dam; and
 - (d) any other information or drawings as required by the state engineer to evaluate the application.
- (3) Upon review, the application will be approved, rejected, or approved with conditions.

Amended by Chapter 5, 1991 General Session

73-5a-205 Approvals void after one year if construction delayed -- Exceptions.

- (1) Any approval granted under Section 73-5a-203 is void one year after the date of approval if construction has not started.
- (2) The state engineer may extend the approval in one year increments:
 - (a) upon a showing of reasonable cause for delay; and
 - (b) provided state-of-the-art design criteria has not changed in the intervening period.

Enacted by Chapter 319, 1990 General Session

**Part 3
Construction Inspections**

73-5a-301 Inspections to insure compliance with plans -- Duties and costs of owners -- Weekly reports.

- (1) During construction, enlargement, repair, alteration, or removal of any dam:
 - (a) the state engineer, his staff, or an independent consultant shall make periodic inspections of the work for the purpose of ascertaining compliance with the approved plans and specifications; and
 - (b) the owner of the dam shall:
 - (i) conduct tests that the state engineer determines are necessary;
 - (ii) provide adequate supervision of the work by an engineer licensed by the state who has experience in dam design and construction; and
 - (iii) disclose information sufficient to enable the state engineer to determine that the work is being done in conformance with the approved plans and specifications.
- (2) Costs of any work or tests required by the state engineer shall be paid by the owner of the dam.
- (3) The engineer who is supervising the work pursuant to Subsection (1)(b)(ii) is required to submit a report weekly to the state engineer. Each report shall show the work accomplished during the previous week and summarize the results of any material testing.

Enacted by Chapter 319, 1990 General Session

73-5a-302 Failure to conform to plans.

- (1) If at any time during construction, enlargement, repair, alteration, or removal of any dam the state engineer finds that the work is not being done in accordance with the approved plans and specifications, he shall:
 - (a) notify the owner of the failure to comply;
 - (b) order the owner to effect compliance with the plans and specifications; or
 - (c) approve the modification to the approved plans and specifications.
- (2) The state engineer may order that no further work be done until compliance has been effected and approved by him.
- (3) A failure to comply with the approved plans and specifications shall render the approval subject to revocation by the state engineer. If compliance is not effected in a reasonable time, the state engineer may order the incomplete structure removed in order to eliminate any safety hazard to life or property.

Enacted by Chapter 319, 1990 General Session

73-5a-303 Circumstances under which the plan must be modified or the approval revoked.

- (1) If at any time during construction, enlargement, repair, alteration, or removal of a dam the state engineer finds that the conditions encountered differ appreciably from those assumed in the plan, he may require the plans to be modified.
- (2) If conditions are revealed which will not permit the construction of a safe dam, the state engineer shall revoke the approval.

Enacted by Chapter 319, 1990 General Session

73-5a-304 Final inspection.

- (1) Following construction and prior to impounding any water, the state engineer shall undertake a final inspection of the project.
- (2) A written final approval of the project shall be issued if:
 - (a) the state engineer determines that:
 - (i) the project was constructed in accordance with plans approved by the state engineer under Sections 73-5a-203 and 73-5a-303; and
 - (ii) during construction, inspections and tests were conducted as required by Section 73-5a-301; and
 - (b) the emergency action plan and standard operating plan meet the requirements set forth in rules adopted by the state engineer.
- (3)
 - (a) The state engineer may require the owner to:
 - (i) submit a formal operating plan for the initial filling of the reservoir; or
 - (ii) follow certain procedures during the initial filling of the reservoir.
 - (b) Failure to submit the operating plan or follow the specified procedures shall result in revocation of the final approval.

Enacted by Chapter 319, 1990 General Session

**Part 4
Operations**

73-5a-401 Records and reports.

The state engineer may make rules requiring the owner of any dam to:

- (1) maintain records pertaining to the construction, operation, or maintenance of the dam; or
- (2) submit:
 - (a) reports to the state engineer regarding maintenance, operation, or instrumentation readings;
 - or
 - (b) any other data considered necessary by the state engineer.

Enacted by Chapter 319, 1990 General Session

73-5a-402 Standard operating plans required.

The owner of each dam shall prepare a standard operating plan for the dam. In the case of a dam in operation prior to May 1, 1991, the standard operating plan shall be submitted to the state engineer for his approval by May 1, 1994. In the case of any dam beginning operations on or after May 1, 1991, the standard operating plan shall be submitted to the state engineer for his approval prior to the final inspection.

Enacted by Chapter 319, 1990 General Session

73-5a-403 State engineer to specify contents of standard operating plans.

By May 1, 1991, the state engineer shall adopt rules specifying the contents of standard operating plans.

Enacted by Chapter 319, 1990 General Session

**Part 5
Inspection of Dams**

73-5a-501 State engineer to inspect dams.

- (1) The state engineer shall inspect each dam that in the state engineer's opinion:
 - (a) poses a threat to human life; or
 - (b) could cause significant property damage if the dam failed.
- (2) An inspection required by Subsection (1) shall occur:
 - (a) at increments commensurate with the relative risk to life and property; and
 - (b) not less than once every five years.
- (3) The state engineer may inspect a dam that is not exempt from regulation by this chapter.

Amended by Chapter 177, 2009 General Session

73-5a-502 Legislative findings -- Immunity from suit -- State engineer to set minimum standards for existing high hazard dams -- Exceptions -- Investigations and plans for compliance with minimum standards.

- (1) The Legislature finds that:
 - (a) it is in the interest of the people of the state to improve the safety of existing dams;

- (b) mutual irrigation companies and water users associations cannot afford to bring dams into conformance with the state's current minimum safety standards without financial assistance from the state;
 - (c) due to limited financial, physical, and human resources, it is necessary to establish priorities for the upgrade of dams; and
 - (d) the state and its officers and employees are immune from suit for any injury or damage resulting from the exercise or performance or the failure to exercise or perform any function pursuant to this chapter.
- (2) The state engineer shall establish minimum standards for existing high hazard dams by rule. The standards for existing high hazard dams may differ from the design criteria established for new construction.
- (3) No seismic standards shall be established for existing high hazard dams within the flood control use classification.
- (4)
- (a) In implementing this section, the state engineer will develop a priority list of high hazard dams. The list will be determined by calculating the relative anticipated breach flows in the event of a dam failure. The dams will be ranked from the largest breach flow to the smallest for all high hazard dams.
 - (b) The state engineer shall investigate annually 25 dams on the priority list in order of their ranking to determine in what areas they are deficient or do not meet minimum standards.
 - (c) Once a determination is made, the owner will be notified that the owner will be required to undertake investigations to determine requirements necessary to bring the dam into compliance with minimum standards.
 - (d) Once the owner has been informed of the deficiencies of the dam, the owner will be given 90 days to respond, in writing, as to what steps the owner is taking to investigate the deficiencies and the time required to complete the investigations.
 - (e) The state engineer will review the proposal, and if it appears reasonable, will approve it.
- (5) The state engineer may not require any mutual irrigation company or water users association to upgrade a dam in conformance with minimum standards, unless a grant to pay for 80% of the costs is made available from the Board of Water Resources.

Amended by Chapter 264, 1996 General Session

73-5a-503 Owners required to perform maintenance -- Orders to protect life and property.

- (1) Following an inspection, the state engineer shall specify what maintenance is necessary to keep the dam and appurtenant structures in satisfactory condition, and the owner of the dam shall be responsible for that maintenance.
- (2) Depending upon the severity of problems noted during an inspection, the state engineer may issue orders for:
- (a) engineering studies;
 - (b) repairs;
 - (c) storage limitations;
 - (d) removal of the dam;
 - (e) breaching of the dam; or
 - (f) any other remedy the state engineer determines is appropriate to protect life and property.

Enacted by Chapter 319, 1990 General Session

Part 6 Emergencies

73-5a-601 Emergency action plans required.

- (1) The owner of any dam which, in the state engineer's opinion, may pose a threat to life or cause significant damage to property if it fails shall prepare a plan of action to be implemented when an emergency involving the dam occurs.
- (2) In the case of a dam in operation prior to May 1, 1991, the emergency action plan shall be submitted to the state engineer for his approval by May 1, 1994.
- (3) In the case of a dam beginning operations on or after May 1, 1991, the emergency action plan shall be submitted to the state engineer prior to the date of the final inspection.

Enacted by Chapter 319, 1990 General Session

73-5a-602 State engineer to specify contents of emergency action plans.

By May 1, 1991, the state engineer shall adopt rules specifying the contents of an emergency action plan.

Enacted by Chapter 319, 1990 General Session

73-5a-603 Emergency power of state engineer.

- (1) The state engineer may intervene during dam emergencies if the owner of the dam cannot be found or is unwilling to take appropriate action. Intervention may occur only when, in the judgment of the state engineer, the condition of any dam is so dangerous to the safety of life or property as to not permit time for issuance and enforcement of any order.
- (2) Emergency actions may include:
 - (a) alerting appropriate public safety entities of the problem;
 - (b) draining the reservoir;
 - (c) hiring personnel or leasing equipment to undertake emergency operations; or
 - (d) taking other steps considered necessary to safeguard life and property.
- (3) Any expenses incurred in undertaking emergency operations shall be reimbursed by the owner of the dam.

Enacted by Chapter 319, 1990 General Session

Part 7 Enforcement and Penalties

73-5a-701 Notice of violation -- Order for corrective action.

- (1) If the state engineer determines that any person is violating any requirement of this chapter or the rules adopted under this chapter, the state engineer shall serve written notice upon the alleged violator which:
 - (a) specifies the violation; and
 - (b) alleges the facts constituting the violation.

- (2) After serving notice as required in Subsection (1), the state engineer may issue an order for necessary corrective action and file an action in the appropriate district court.

Enacted by Chapter 319, 1990 General Session

73-5a-702 Civil penalties -- Costs -- Civil liability.

- (1) Any person who violates this chapter or any lawful notice or order issued pursuant to this chapter shall be assessed a penalty not to exceed \$5,000 per violation in a civil proceeding.
- (2) In the case of a continuing violation, each day that the violation continues constitutes a separate and distinct offense.
- (3) Any person who violates this chapter shall be liable for any expenses incurred by the state engineer in abating any violation of this chapter.
- (4) A penalty assessment under this chapter does not relieve the person assessed from civil liability for claims arising out of any act which was also a violation.

Enacted by Chapter 319, 1990 General Session