TENNESSEE DAM SAFETY LAWS AND REGULATIONS 2007

Citation

The law pertaining to dam safety is the 1973 Safe Dams Act (TCA, Section 69-11-101 through 125), last amended March 1996. Regulations are found in the Rules of the Tennessee Department of Environment and Conservation, Division of Water Supply, Chapter 1200-5-7, effective February 2001.

History

The Safe Dams Act was passed in 1973 after the Buffalo Creek Failure in West Virginia in 1972.

Definitions

The law and the regulations define a *dam* as any artificial barrier, together with appurtenant works, which does or may impound or divert water, and which either (1) is or will be twenty feet or more in height from the natural bed of the stream or watercourse at the downstream toe of the barrier, as determined by the Commissioner, or (2) has or will have an impounding capacity at maximum water storage elevation of thirty acre-feet or more. Provided, however, that any such barrier which is or will be less than six feet in height, regardless of storage capacity, or which has or will have a maximum storage capacity not in excess of fifteen acre-feet, regardless of height, shall not be considered a dam, nor shall any barrier, regardless of size, be considered a dam, if, in the judgment of the Commissioner, such barrier creates an impoundment used only as a farm pond" [TCA 69-11-102-(3) and 1200-5-7-.02 (10)]. Diversion weirs, roadbeds, water tanks, and wastewater impoundment barriers as defined are not considered dams. The regulations go on to define what is not a farm pond.

Dam Classifications

According to the regulations, dams are classified by size and hazard potential:

Size Classifications

Category	Storage (acre-feet)	Height (ft)
Small	30 - 999	20 - 40
Intermediate	1000 – 50,000	41 - 100
Large	50,000 +	100 +

Hazard Potential Classifications

Category 1 dams are located where failure would probably result in any of the following: loss of human life; excessive economic loss due to damage of downstream properties; excessive economic loss, public hazard, or public inconvenience due to loss of impoundment and/or damage to roads or any public or private utilities.

Category 2 dams are located where failure may damage downstream private or public property, but such damage would be relatively minor and within the general financial

capabilities of the dam owner. Public hazard or inconvenience due to loss of roads or any public or private utilities would be minor and of short duration. Chances of loss of life would be possible but remote.

Category 3 dams are located where failure may damage uninhabitable structures or land but such damage would probably be confined to the dam owner's property. No loss of human life would be expected (1200-5-7-.05).

The regulations state that dams will be re-evaluated for hazard potential every 5 years (1200-5-7-.05).

Design Criteria

Hydrologic:

Existing Dams [1200-5-7-.06(3)(b)]

Hazard Potential Category	Size	Freeboard Design Storm (6 Hours)
Category 3 (Low)	Small	100 year
	Intermediate	1/3 PMP
	Large	1/2 PMP
Category 2 (Significant)	Small	1/3 PMP
	Intermediate	1/2 PMP
	Large	PMP
Category 1 (High)	Small	1/2 PMP
	Intermediate	PMP
	Large	PMP

New Dams [1200-5-7-.07(4)(d)]

Size	Freeboard Design Storm (6 Hour)
Small	1/2 PMP
Intermediate	PMP
Large	PMP

Seismic: None for existing dams.

For new dams [1200-5-7-.07(1)(b)]:

All structures other than Category 3 dams shall be designed to withstand seismic accelerations of the following intensities: Zone 1 = 0.025g, Zone 2 = 0.05g, Zone 3 = 0.15g. Zones refer to "Geologic Hazards Map of Tennessee" by Robert A. Miller, 1978.

Jurisdiction/Powers of Department

The law gives enforcement authority to the Commissioner of Environment and Conservation through the Division of Water Supply who may exercise the following powers (TCA 69-11-104):

Administer the provisions of this chapter and the provisions of rules and regulations adopted by the commissioner pursuant to this chapter. (Rules and regulations can only be adopted after a public hearing has taken place. Rules establish uniform policies but the law makes note that some rules may apply on a case-by-case basis.)

Conduct or obtain inspections, investigations, research, etc., as deemed necessary to maintain the safety of the construction, operation or maintenance of dams and shall be given right of entry at any time for such purposes plus the right of ingress or egress across intervening properties.

Assess civil penalties for violation of any provision of this chapter or of the rules.

Order remedial work, cite non-compliance and invoke judicial action if necessary.

Examine and approve or disapprove applications for certification to construct, enlarge, repair, alter, maintain, or operate a dam. Suspend or revoke any certificate for any act of failure to comply with these provisions or conditions attached to the certificate. The commissioner may also modify a certificate.

Establish construction, enlargement, maintenance, etc. standards for dams.

Order the immediate cessation of work begun without a certificate of approval.

Issue court actions to obtain enforcement of commissioner's orders.

Hear appeals from orders issued, penalties assessed, or certificates suspended or revoked and administer oaths, issue subpoenas, etc. to carry out the hearing.

When the commissioner determines that a permit is not being met or the conditions at the site are unsafe, he may order the owner to remedy the situation at the owner's expense. In emergency situations, the commissioner may take over the dam to render it safe. The owner is also responsible for these costs. The commissioner may take legal action to recover the costs from the owner (TCA 69-11-117).

Permit/Approval Process

The law says that it is unlawful to construct, enlarge, repair, alter, remove, maintain, or operate a dam without first obtaining a certificate of approval and safety (TCA 69-11-105). In order to receive a certificate, an applicant must follow specific instructions that are described in the law. The regulations describe the types of certification and the process. There are three types of certification: construction, operation, and alteration. All three have different requirements described in the regulations (1200-5-7-.04).

Dam design standards are described in the regulations and include information on existing dams on stability, slope protection, and emergency spillways; and, for new dams on overall design, principal spillways, drawdown facilities, emergency spillways, and earth embankments. It also lists engineering requirements (1200-5-7-.06 - .08).

Plans and specifications submitted to the commissioner for construction, enlargement, alteration, repair or removal of dams and reservoirs shall be the responsibility of and signed by an engineer, licensed by the state of Tennessee (TCA 69-11-106). Nothing in the law or regulations discusses bond requirements by the owner to ensure financial responsibility of work.

The law describes specific conditions for approval of a certificate, points the commissioner should follow. Before the certificate is approved, the commissioner shall conduct an inspection of the site and the certificate will be issued or not within sixty days of this inspection (TCA 69-11-110).

The certification is effective for up to 5 years, after that time the applicant must reapply (TCA 69-11-113).

Fees

The law establishes two fee structures based on the construction of new dams and the safety inspection of existing dams (TCA 69-11-116). In the law, fee structures are outlined, the regulations designate actual amounts.

Project review fees for construction of new dams to accompany construction certificates (1200-5-7-.09):

Height of Dam	**Charge**
6 - 40 ft.	$1000
41 - 60 ft.	$1500
>60 ft.	$2000

This fee shall not exceed 1% of total estimated cost of the dam.

Safety inspection fees are required to accompany the application for an operation certificate. The inspection fee is $300 per inspection.

All fees collected are earmarked for compliance with the provisions of this law.

No fees are charged for inspection of dams owned by watershed districts (TCA 69-11-116).

Inspection Process

State - The public safety and welfare requiring it, the commissioner shall conduct a program of regular inspections of dams, reservoirs, and downstream floodplains within the state. The frequency of such inspections shall be as determined by the commissioner, who may establish different inspection intervals for dams based on their hazard categories (Law 69-11-115).

An inspection frequency table is not in the laws or regulations, but a permit cannot be issued for more than five years.

Owner - Owner inspections are not specified in the rules and laws. Also, it is not mentioned if owner inspections are required to be conducted by an engineer.

Frequency of Inspections

Hazard Classification	*Inspection Cycle*
High	Annually
Significant	Biennially
Low	Triennially

Owner Non-Compliance/Violations/Penalties

The commissioner may bring suit for injunctive enforcement of any order made by him when such order has become final and such person has failed to comply with the order (TCA 69-11-120). Any person who violates or fails to comply with any provision of the laws or rules shall be subject to a civil penalty of not less than $50 or more than $5,000 per day of violation. Each day the violation occurs constitutes a separate violation (TCA 69-11-121).

The law describes what actions constitute violations and the penalty assessment process in detail (i.e. what action constitutes a violation) (TCA 69-11-117).

Emergencies

The owner is responsible for taking emergency action when necessary but, when the owner fails to take satisfactory action where, in the judgment of the commissioner, the danger to life or property will not permit delay, the commissioner shall request that a state of emergency be declared by the governor, and upon such declaration, shall take such action as he deems necessary to render the dam or reservoir safe (Law 69-11-117).

When the state takes emergency action, the owner of the dam shall be liable for the costs of taking such action and a lien for the costs of taking such action shall be automatically created on all property owned by any such owner at or proximate to such dam or reservoir (Law 69-11-117).

The regulations require that new dams with a high-hazard potential rating submit emergency action plans to the commissioner. The regulations list what should be included in the EAP (1200-5-7-.10).

Liability

According to the law, the owner is fully responsible and liable for the safety and operation of the dam or reservoir (TCA 69-11-124).

Liability of state personnel is not mentioned in the laws or rules.

Oversight

The commissioner shall call a public hearing if grievances concerning a violation or certificate disapproval or revocation should arise. The law describes the hearing procedure in detail (TCA 69-11-118).

Appeals from judgments or decrees of the chancery court [based on indictments for non-compliance issued by the commissioner] in proceedings under the provisions of the law shall lie to the Court of Appeals despite the fact that controverted questions of fact may be involved (Law 69-11-120).

Miscellaneous

With regard to the permit process, the law provides that state certification requirements are waived for those projects approved by the federal government. It goes on to say that Army Corps of Engineers inspection reports are valid inspections and can be used for state records, provided they are not more than one year old (TCA 69-11-106).

The law describes the transfer of ownership process and says that multiple dam owners are not required to obtain individual certificates (TCA 69-11-107).

State Citations

	Statute	*Regulations*
Original	Tennessee Safe Dams Act Tennessee Code Annotated (T. C. A.) 69-11-101 et seq.	Chapter 1200-5-7
Last Amended	2007	2001

State Web Site: http://state.tn.us/environment/dws/safedams.shtml