

Monitoring Dams in Texas

The Texas Dam Safety Program

Warren D. Samuelson, P. E., Dam Safety Program Coordinator

Texas Commission on Environmental Quality, Austin, Texas 78711
E-mail: wsamuels@tceq.state.tx.us

Mission

The mission of the Texas Dam Safety Program is to protect the lives, safety, and health of the public from dam failures or improper operation, to preserve the beneficial uses of dams and reservoirs, and to reduce these risks with an understanding of the limitations placed by technical, economic, political, and social concerns.

History

The current Texas Dam Safety Program began in 1968, with the first inspections conducted in 1969. Problems dams were monitored, and owners were advised to correct the problems.

Between 1977 and 1981, an evaluation of all high hazard dams was made under the National Dam Safety Program. A dam was identified as unsafe if the dam did not pass 50% of the probable maximum flood (PMF). During this period of time, spillway adequacy studies and breach analyses were undertaken.

The current rules for dam safety were adopted in 1986 and were based on federal guidelines.

In 1990, the *Guidelines for Operation and Maintenance of Dams in Texas* was published.

In 1998, the Texas Natural Resource Conservation Commission's Executive Director formed a Task Force to evaluate the program and to make recommendations for changes in the Program and in the rules. The findings were published in June 1998.

Budget changes over the years resulted in fewer resources to perform inspections and monitor dams. However, dams have been upgraded to meet current standards, and inspections were conducted on a regular basis.

In 2003, a decision was made to upgrade and increase the visibility of the program.

The Texas Dam Safety Program

Scope of Work

- 7,560 dams in the Inventory, including federal dams
- 878 high hazard dams, including federal dams (probable loss of life if dam fails)
- 810 significant hazard dams (possible loss of life if the dam fails)
- 89% of dams over 25 years old

Responsibilities

- Inspections of existing dams and dams under construction
- Review of construction plans and specifications for new dams and dams being modified
- Review of hydrologic and hydraulic adequacy of dams
- Review of owner's inspection reports
- Review of emergency action plans
- Review of water rights permit applications when a dam is involved

Monitoring of Dams

- The number of inspections of existing dams has been increased. Since September 1, 2004, over 370 reports have been sent to owners. The owners are being required to respond within a defined time period with a plan of action for correcting items identified during the inspections.
- Contracts have been developed for outsourcing inspections. 247 inspections will be performed under these contracts.
- A contract was developed for security inspections of critical dams. There have been 34 safety and security inspections.
- The inspections have found that maintenance of dams generally has not been performed.
- A contract was developed for a hydrologic and hydraulic guide for dams. The guide is currently being drafted. Initial indications are that there will be changes in the way analyses of dams are performed in Texas.
- Lines of communication have been established with consulting engineers to ensure that plans and specifications for all dams proposed for either construction or modification are submitted for review and approval.
- Revised rules are in the process of getting approval to publish for comments. Stakeholder input has been obtained. These proposed rules will include a number of requirements, like emergency action plans and operation and maintenance.
- The *Guidelines for Operation and Maintenance of Dams in Texas* manual is being rewritten and will be provided to owners when published.
- Plans are being made to do several workshops for owners this summer.