Maryland Dam Safety

Laws, Regulations & Liabilities

Disclaimer: I am not a lawyer, this is not legal advice

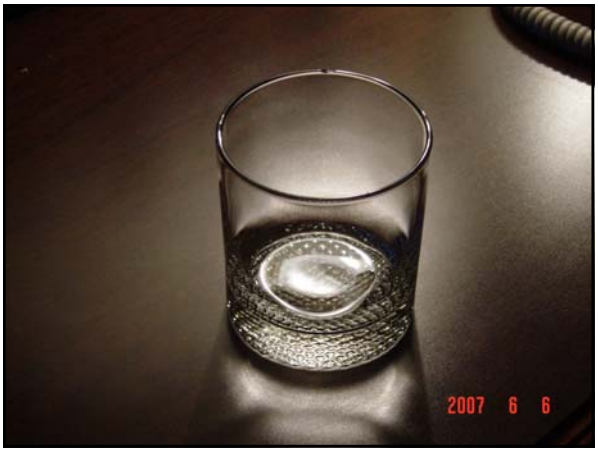
Why don't sharks attack lawyers?

Maryland

- Dams & Reservoirs
- A dam is any obstruction, wall, or embankment together with its appurtenant works…constructed for the purpose of storing or diverting water…

These are dams.

Are these dams?



Engineering Report

- Alterations to the existing impoundment structures such as the reservoir embankment are subject to Maryland Dam Safety approval…
- It is expected that the construction of a self-supported (pre-cast,pre-stressed or cast-in-place) reservoir would eliminate the Dam Safety requirements…

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environment
DAM SAFE TY

Large Water Tanks Spur Safety Questions

Some officials believe covered reservoirs and water tanks should be regulated as dams.

6/13/2007
By William J. Angelo

As security concerns and federal water-quality regulations push authorities to cover more U.S. reservoirs or use large steel or concrete storage tanks for potable water supply, new questions are emerging over whether these water impoundments should be regulated as dams in order to ensure public safety.

The burgeoning number of large-volume water tanks now under construction pushed the issue to the surface on June 6 at the Northeast Regional Conference of the Association of State Dam Safety Officials in Manchester, N.H. By not classifying storage tanks and reservoirs as dams, public officials wrongfully exclude them from dam safety requirements, said Charles H. Wallis, water resource engineer for the Maryland Dept. of Environment Dam Safety Division. If a structure is constructed for the purpose of storing or diverting water, technically its a dam, he says. In that case, shouldnt rules for dam safety and construction apply, as well as formal emergency action plans?


Storage tanks like this record-setter in California are getting bigger.

The structures fall into a regulatory gray area. Water supplies have their own regulations. The U.S. Environmental Protection Agency enforces the Interim and Long-Term Enhanced Surface Water Treatment Rules, mandating covered water storage or stringent treatment standards. Dams are regulated by other state and federal agencies, including the Federal Emergency Management Agency. Wallis believes that the tension between water-quality and public-safety issues needs to be addressed.

Some water tanks are getting so large that they pose a hazard, because if they fail, they could inundate population and infrastructure, says Wallis. The unintended consequences of not addressing this issue is that some agencies still focus on protecting the water supply, whereas others will view it as a potential hazard.

There is cause for concern. On Sept. 21, 1998, a 5-million-gallon, 35-year-old precast-concrete water tank blew out in Westminster, Calif., sending a 6-ft wave of water into the city. It destroyed or damaged about 50 structures at a

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cost of $27 million.

Wiss, Janney, Elstner Associates Inc., Los Angeles, performed the forensic engineering. The tank had 72 precast panels that were held in place by posttensioned top and bottom rings, says Gary R. Searer, WJE structural engineer. The bottom- ring post-tension cable was located in the slab, not in the ring, so the only thing connecting the ring to the slab was some No. 4 rebar, which was nominal reinforcement. It was a failure waiting to happen.

The tank was sited on a flat area, so the primary impact was limited to a residential complex and fire station, even though seven panels were compromised, says Searer. If it were a large tank on a hillside, it would have been a lot different, he adds.


WALLIS

Wallis suggest that states review all tanks, view them as dams and assign a hazard rating of exempt, low, significant or high, just like dams. Size and impact thresholds should be reviewed and a policy established, which is not happening yet, says Wallis. We are starting the process in Maryland and spreading the word to other states to help determine a nationwide consensus. Then we will have a clear direction on how to proceed for better public safety.

But there is little interest in the scheme at the Massachusetts Water Resources Authority, which is responsible for supplying 225 million gallons of potable water a day to the greater Boston area and which recently completed a $1.7-billion system upgrade that included construction of five new concrete tanks totaling 220 million gallons. We have never considered tanks as dams because they are designed to structurally stand alone, even if they have an earthen embankment, which is usually there for aesthetics or security only, says Mike Hornbrook, MWRA chief operating officer. He notes that tanks are built to national standards, and operators have a lot more control over inflow, unlike a dam.

Visual Screening

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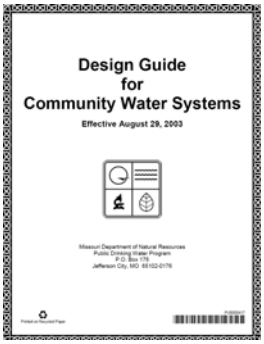
Replacing Leaky Tanks A Priority

- North Andover officials are moving quickly to replace two leaking water tanks that are sending an estimated 34,000 gallons per day into neighboring properties…
- It's affecting their yards, ruining their trees…
- The Boston Globe July 17,2005


Design Guide
for
Community Water Systems
Effective August 29, 2003

2.4. Siting Requirements.

a. Site shall not be subject to a significant risk from floods, fires, pollution, or other disasters, which could cause a breakdown of the public water supply system or portion thereof.
b. Non-submersible intake pumping equipment and accessories shall be located or protected to at least four feet above the 100-year flood elevation or the highest flood elevation on record.
c. The department shall be consulted regarding any structure that may impede normal or flood stream flows.
d. In earthquake prone areas, structures should be designed to withstand earthquake effects.

Aug. 29, 2003
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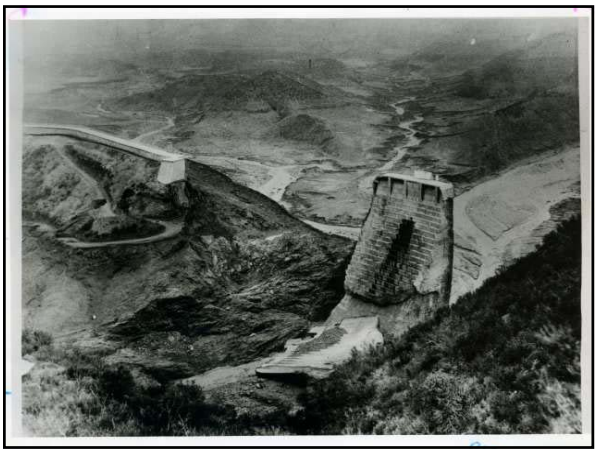
History of Dam Safety

- March 1928 – St. Francis Dam Failure
- June 1976 – Grand Teton Dam Failure



Water Resources Legislation in Maryland

Creation of "The Water Resources Commission of Maryland"

Maryland recognized the need to regulate the water resources of the State as early as 1931 with the creation of the first "Water Resources Commission of Maryland." Chapter 257 of the Annotated Code of Maryland, enacted on June 1, 1931, authorized the Governor of the State "to appoint a commission of seven persons to review the underground and surface water resources of the State of Maryland in order to determine upon the most effective plan to preserve and allocate such water supply resources for maximum public benefit and use."

This commission was charged with the responsibility of developing programs to measure stream flow; supervise the location, design, and construction of water supply dams and reservoirs; improve rivers of the State to prevent damaging floods; control public water supplies; regulate stream flow by storage reservoirs; and evaluate the necessity for creating water districts. By this Act, the commission, was also to present a written report of its findings and recommendations to the General Assembly of 1933 with regard to policy, legislation, and methods of financing.

Commission Activities

With the task of regulating the State's water resources at hand, Governor Albert C. Ritchie appointed a group of seven individuals that would comprise the first Water Resources Commission of Maryland. This commission met for the first time on September 22, 1931 with the election of officers as their first order of business. Being elected chairman, Mr. Abel Wolman reiterated the need for a regulatory body stating that water supply control had become apparent from the recent drought of 1930-31. Six committees were established to:

1) inventory Maryland streams and underground water resources,
2) evaluate the State's control of water resources and where it needs to extended,
3) estimate future water supply needs,
4) evaluate flooding and other stream regulating needs,
5) discuss the status of present stream gaging,
6) and evaluate other State's efforts with regard to regulation and control by means of flood and river regulating districts. Each committee was to gather material so as to result a written report to the other commission members for review.

S.640

Water Resources Development Act of 1996 (Enrolled Bill (Sent to President))

(3) in subsection (d) (as so redesignated) by striking '(b)' and inserting '(c)'.

SEC. 215. NATIONAL DAM SAFETY PROGRAM.

(a) PURPOSE- The purpose of this section is to reduce the risks to life and property from dam failure in the United States through the establishment and maintenance of an effective national dam safety program to bring together the expertise and resources of the Federal and non-Federal communities in achieving national dam safety hazard reduction. It is not the intent of this section to preempt any other Federal or State authorities nor is it the intent of this section to mandate State participation in the grant assistance program to be established under this section.

(b) EFFECT ON OTHER DAM SAFETY PROGRAMS- Nothing in this section (including the amendments made by this section) shall preempt or otherwise affect any dam safety program of a Federal agency other than the Federal Emergency Management Agency, including any program that regulates, permits, or licenses any activity affecting a dam.

(c) DAM SAFETY PROGRAM- The Act entitled 'An Act to authorize the Secretary of the Army to undertake a national program of inspection of dams', approved August 8, 1972 (33 U.S.C 467 et seq.; Public Law 92-367), is amended--

(1) by striking the 1st section and inserting the following:

'**SECTION 1. SHORT TITLE.**

'This Act may be cited as the 'National Dam Safety Program Act'.';

(2) by striking sections 5 through 14;

(3) by redesignating sections 2, 3, and 4 as sections 3, 4, and 5, respectively;

(4) by inserting after section 1 (as amended by paragraph (1) of this subsection) the following:

'**SEC. 2. DEFINITIONS.**

'In this Act, the following definitions apply:

'(1) BOARD- The term 'Board' means a National Dam Safety Review Board established under section 8(b).

'(2) DAM- The term 'dam'--

'(A) means any artificial barrier that has the ability to impound water, wastewater, or any liquid-borne material, for the purpose of storage or control of water, that--

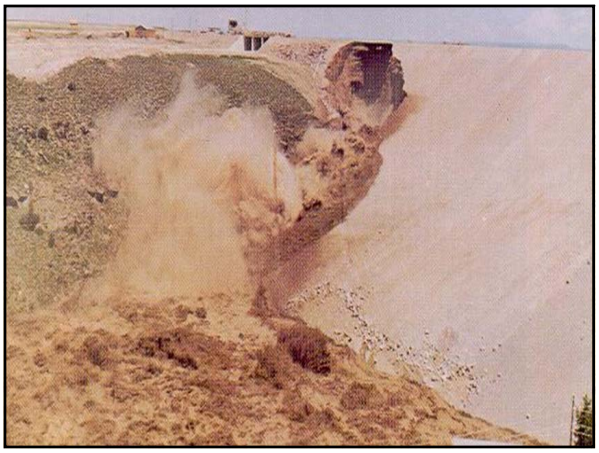
'(i) is 25 feet or more in height from--

'(I) the natural bed of the stream channel or watercourse measured at the downstream toe of the barrier; or

'(II) if the barrier is not across a stream channel or watercourse, from the lowest elevation of the outside limit of the barrier, to the maximum water storage elevation; or

'(ii) has an impounding capacity for maximum storage elevation of 50 acre-feet or more; but

'(B) does not include--



FIRST FILLING

mde

Dam Safety Laws

Maryland Department of the Environment
Water Management Administration
Dam Safety Division

PERMIT

WATERWAY CONSTRUCTION PERMIT NO.
12-MR-00XX

EFFECTIVE DATE OF PERMIT
September 19, 2011

In accordance with Title 5, Subtitle 5 of Environment Article, Annotated Code of Maryland, permission is hereby granted to **The Dutch Boy**, hereinafter referred to collectively as "the Owner" or "the Permittee", by the Maryland Department of the Environment, Dam Safety Division ("the Department") to **Plug a leaking dam** as shown on plan sheets 4 through 10 prepared by **the Engineer** and approved by the Department on September 19, 2011.

The site is located near Main Street, on the Patapsco River in **Baltimore City**, at latitude 39.30 degrees north, longitude -76.5 degrees west, MD Grids 542000N and 931000E, ADC map/grid: 36/D7.

Sincerely,

John Doe
Program Administrator
Sediment, Stormwater, and Dam Safety Programs

This **PERMIT** is granted subject to the following:

PUBLIC NOTICE

Engineer In Charge

adapted from Dilbert © by S. Adams

- **ENVIRONMENTAL ARTICLE § 5-509.**
- (a) On complaint or the Department's own initiative, **the Department may investigate or examine any reservoir, dam, or similar waterway construction.**

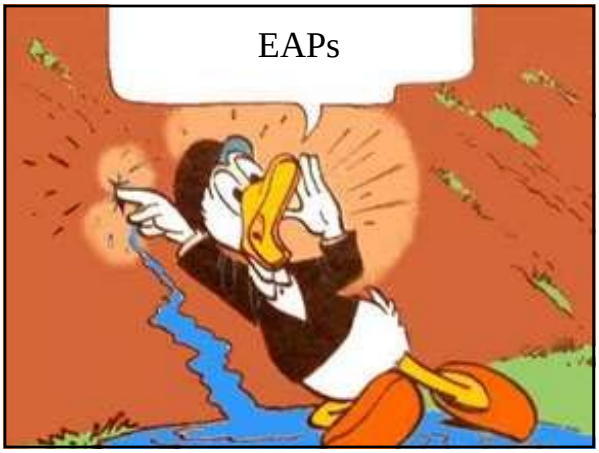
If the Department determines that the reservoir, dam, or similar waterway construction is unsafe, needs repair, or should be removed because the reservoir, dam, or similar waterway construction is unsafe and not repairable, the Department shall notify the owner in writing to repair or remove the object, as the situation warrants. The repair or removal work shall be completed within a reasonable time, which time shall be prescribed in the Department's notice.

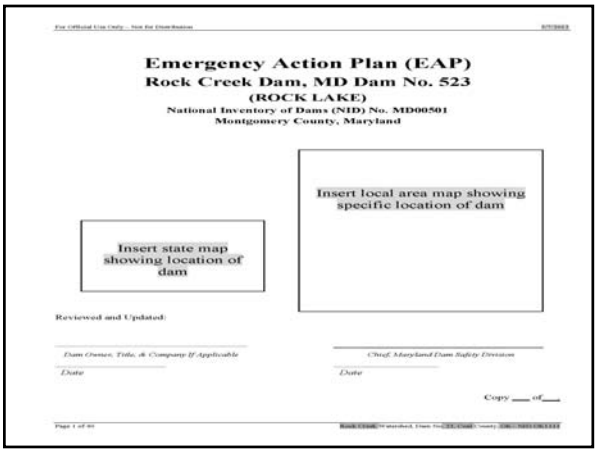
(b) If the work is not completed in the time prescribed in the notice, the Department may have the work completed at the expense of the owner. The Department shall charge the owner for this expense, and if the repayment is not made within 30 days after written demand, the Department may bring an action in the proper court to recover this expense.

Regulations

Policies

EAPs





Emergency Action Plan (EAP)
Rock Creek Dam, MD Dam No. 523
(ROCK LAKE)
National Inventory of Dams (NID) No. MD00501
Montgomery County, Maryland

Insert local area map showing specific location of dam

Insert state map showing location of dam

Reviewed and Updated:

Dam Owner, Title, & Company If Applicable

Date

Chief, Maryland Dam Safety Division

Date

Copy ___ of ___

EAP Levels

- Level I – unusual, non-emergency event
- Level II- situation rapidly developing, still attempting to save the dam
- Level III- urgent event, save lives and downstream property