

Can lightning strike an indoor pool?

July 1 2015, by Beth Skwarecki

Two swimming pool weather policies have surprised me in recent years. One was when I showed up to swim laps at an outdoor pool as it was beginning to drizzle. "Come on in," I was told; as long as there was no lightning, the pool was still open. So I had one of my weirdest swims ever: you turn your head out of the water to breathe, but your face is still wet. Thanks, rain.

Here's the other: an indoor pool I know closes during thunderstorms. Surely they've bought into some bizarre urban legend, right?

If it's a myth, it's a popular one. As one YMCA [explains](#),

The YMCA of the USA, FEMA, the American Red Cross, NOAA, and the National Lightning Safety Institute all advise to not use plumbing of any kind during thunder and lightning and to stay clear of windows.

Meanwhile, the Director of Aquatics at a university athletic department agrees with my first impression. He [writes](#) that closing indoor pools for [lightning](#) is "THE urban myth" and adds:

At Penn State University we keep our four indoor pools open during electrical storms with the approval of our Environmental Health and Safety Department, the Risk Management Department and our High Voltage Experts on campus.

From there, the debate gets weird, and is mostly conducted on early-2000s-era websites. (I saw more blinking text and Comic Sans

researching this topic than I ever thought I would see in an afternoon in 2015.) Several of the anti-pool-closing websites mentioned a Dr. Vicki Weiss, [quoted in 2008 in Aquatics International](#) as saying that "a pool closure policy is in violation of the National Electric Code section 250.4(A)(1) and you will be subject to regulatory enforcement."

I looked up the National Electric Code section 250.4(A)(1). Here's what it says:

250. Grounding and bonding

(A) Grounded Systems.

(1) Electrical System Grounding. Electrical systems that are grounded shall be connected to earth in a manner that will limit the voltage imposed by lightning, line surges, or unintentional contact with higher-voltage lines and that will stabilize the voltage to earth during normal operation.

Informational note: An important consideration for limiting the imposed voltage is the routing of bonding and grounding electrode conductors so that they are not any longer than necessary to complete the connection without disturbing the permanent parts of the installation and so that unnecessary bends and loops are avoided.

There's nothing in there about pool closing policies. It does say that electrical systems should be bonded and grounded to minimize possible damage from lightning. Does that mean that you are totally perfectly safe when in a pool?

Not necessarily. The Redwoods Group, which provides insurance to some YMCAs, notes that some pool buildings were built before this regulation was in effect, some have metal bleachers or lifeguard chairs that aren't connected to ground, and that the bonding in a well-built

system can still deteriorate over time. That means some pools are probably safe in a lightning storm, some definitely aren't, and there are plenty whose status isn't clear.

Now the inconsistent policies make more sense. Aquatics directors who are confident that their building is protected from lightning may choose to keep the pool open during storms; others may know that theirs is not safe or may choose to close out of caution. Lightning has been observed in indoor [pools](#), causing injuries and electrical damage.

One last point: a detail both sides repeat is that nobody has ever been killed by lightning while swimming indoors. But [NOAA's data on lightning fatalities](#) don't distinguish between indoor and outdoor swimming. This factoid is based on an absence of evidence, not evidence of absence.

How do most lightning fatalities occur? Fishing and camping, according to NOAA, with many occurring as somebody seeks shelter too late. Men make up 81% of total fatalities, and 90% in the fishing and sports categories. Better to get inside (or out of a pool, if asked) than to end up like [one of these unfortunate but comically animated pixel people](#).

This story is republished courtesy of PLOS Blogs: blogs.plos.org.

Provided by Public Library of Science

Citation: Can lightning strike an indoor pool? (2015, July 1) retrieved 20 March 2024 from <https://phys.org/news/2015-07-lightning-indoor-pool.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.
