

ENTRAPMENT HAZARD IN POOL DRAINS

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In March 2005, the Consumer Product Safety Commission (CPSC) issued a report entitled “Guidelines for Entrapment Hazards: Making Pools and Spas Safer” to “provide safety information that will help identify and eliminate dangerous entrapment hazards in swimming pools, wading pools, spas, and hot tubs.” Specifically, the CPSC report addressed the hazards of body entrapment, hair entrapment/entanglement, and evisceration/disembowelment.” According to the CPSC, these guidelines were “intended for use in building, maintaining, and upgrading public and private pools and spas.” Moreover, the CPSC noted that guidelines were “appropriate for use by parks and recreation personnel, public health organizations, equipment purchasers and installers, pool and spa owners, inspection officials, code officials, and others who are responsible for pool and spa safety.”

See: <http://www.cpsc.gov/CPSCPUB/PUBS/363.pdf>

EVISCERATION

According to the 2005 CPSC report, a number of young children had been seriously injured after sitting on wading pool drains. These children, typically 2 to 6 years of age, suffered non-fatal debilitating “rectal lacerations and partial and nearly complete eviscerations” after being “sucked into” drain sumps.

The incidents occur primarily in public wading pools where a floor drain cover is broken or missing. Young children have direct access to the bottom drain in wading pools because of the shallow water. Generally, drains are equipped with either flat grates or dome-shaped covers. The domed shape helps to prevent sealing of the pipe opening by the body. However, if the grate or cover is unfastened, broken, or missing, the potential for an incident exists. When the child's buttocks cover the drain opening, the resulting suction force can eviscerate the child through the ruptured rectum. A small change in pressure is sufficient to cause such injury extremely quickly.

In addition, the CPSC report noted that a life-threatening hazard exists when the plumbing configuration of the circulation pump allows a strong suction force to persist after the drain is completely covered and blocked by a body part.

As characterized by the CPSC, the 2005 Guidelines report was “not intended as a CPSC standard or mandatory federal requirement.” Rather, this March 2005 report simply reflected “changes in codes and voluntary standards” since original guidelines were issued in 1998. Specifically, “[s]ince the release of the first edition of the guidelines” in 1998, the CPSC found “changes have been made in codes and new standards for SVRS [safety vacuum release systems] have been developed” for pools and spas. A safety vacuum release system (SVRS) is a device that responds to an increase in pump suction associated with entrapment and relieving entrapping suction and/or shutting down the pump when a blockage is detected.

In updating the Guidelines, the CPSC report found a number of “current codes and standards for pools and spas contain requirements to prevent body entrapment, hair entrapment/entanglement, and evisceration,” including SVRS. For example, North Carolina Rule .2539 (b) requires the following:

Effective April 1, 2006 all public swimming pools with a single main drain shall be protected from potential bather entrapment by a safety vacuum release system installed on the drain piping and single drains smaller than 12 inches in diameter shall be protected by an anti-entrapment drain cover meeting ASME/ANSI A112.19.8M Standard. [The term ASME/ANSI as applied to a safety standard means such a standard that is accredited by the American National Standards Institute and published by the American Society of Mechanical Engineers.]

In explaining why the 2005 Guidelines were developed, the CPSC found entrapment “incidents and deaths continue to occur” despite changes in pool/spa safety standards and code requirements.

#### HAIR ENTANGLEMENT

During the period January 1990 to August 2004, the CPSC report also cited 43 incidents of hair entrapment or entanglement in pools, spas, and hot tubs. Twelve of the incidents resulted in drowning deaths, as a result of hair becoming entangled in the drain grates. Thirty-eight incidents occurred in spas, including hot tubs, and five occurred in a pool. The victims’ ages were between 4 and 42, with a median age of 9 years – 92.5% were under the age of 15.

Unlike the entrapment/evisceration hazard for wading pools described above, the CPSC report found hair entrapment occurred “because of the tangling and not necessarily because of strong suction forces, although the suction forces initially draw the hair into the drain cover.”

Typically, these incidents involve females with long, fine hair, who are underwater with their head near a suction outlet (drain). The water flow into the drain sweeps the hair into and around the drain cover, and the hair becomes entangled in and around holes and protrusions on both sides of the cover...

The design of a drain cover in association with the flow rate through it has been found to relate to the cover’s ability to entrap hair. Large openings in the covers in combination with high flow rates can pull hair through the cover and cause entanglement in the turbulence behind the cover.

According to the CPSC, “[r]educed flow rates and smaller holes in the drain cover can make entanglement less likely to occur.” Moreover, the CPSC noted that voluntary industry standards for certifying drain covers with a maximum flow rate in gallons per minute (GPM) were developed around 1982. Accordingly, the CPSC found that drain covers “available on the market since 1982 are supposed to conform to a standard that provides hair entrapment/entanglement protection.” The CPSC, however, acknowledged that “it can be

difficult to determine actual flow rates in pools and custom-built spas, and thus to know if they are equipped with the proper fitting to prevent hair entanglement.”

## BODY ENTRAPMENT

As described in the March 2005 report, during the period January 1990 through August 2004, the CPSC received reports of 13 confirmed deaths by drowning caused by a body or limb becoming entrapped against the drain of a pool or spa. The most notorious of these reported deaths occurred in a residential spa on June 15, 2002 when the 7 year-old granddaughter of James Baker (former Secretary of State in the Reagan administration) drowned in a residential spa. This tragedy prompted the Baker family to become “tireless advocates” for proposed federal legislation (H.R. 1721 in the House and S. 1771 in the Senate) “requiring the use of proper anti-entrapment drain covers and pool and spa drainage systems.”

At the urging of the Baker family, H.R. 1721, the proposed “Pool and Spa Safety Act” was introduced by Rep. Debbie Wasserman Shultz (D-Fl.) on March 27, 2007. On the fifth anniversary of her death (June 15, 2007), Rep. Wasserman Shultz urged her House colleagues to honor Virginia Graeme Baker and make “the world a safer place for all of our children” by supporting H.R. 1721. In so doing, Rep. Wasserman Shultz recounted the horrific circumstances surrounding the entrapment incident in the *Congressional Record* (H6569):

On June 15, 2002, Graeme attended a pool party with her entire family, her mother Nancy and her four sisters. Everyone was having a great time swimming, when all of the sudden, one of Nancy's daughters came running to tell her that Graeme was in the spa. Nancy ran to the edge of the spa, and all she saw was dark and bubbling water.

Her daughter, frantically crying and pointing into the tub, insisted that Graeme was there. Nancy jumped into the spa and saw Graeme with her eyes pinched closed, her hair and limbs moving with the current of water from all the jets on the side. Graeme was entrapped by the powerful suction of the drain spa and could not free herself.

Nancy pulled and pulled with all her strength to help her daughter. It eventually took the strength of two adults to free Graeme from the spa. It was sadly too late; Graeme passed away in the hospital later that afternoon.

Within one year of its being enacted into law, H.R. 1721 would require “each swimming pool or spa drain cover manufactured, distributed, or entered into commerce in the United States shall conform to the entrapment protection standards of the ASME/ANSI A112.19.8 performance standard, or any successor standard regulating the same.” In so doing, H.R. 1721 would effectively transform the March 2005 CPSC “Guidelines for Entrapment Hazards: Making Pools and Spas Safer” into a mandatory federal safety standard.

Similarly, the analogous Bill in the Senate (S. 1771), entitled the “Virginia Graeme Baker Pool and Spa Safety Act,” would create a mandatory federal safety standard requiring “each

swimming pool or spa drain cover manufactured, distributed, or entered into commerce in the United States shall conform to the entrapment protection standards of the ASME/ANSI A112.19.8 performance standard, or any successor standard regulating such swimming pool or drain cover.” In addition, S. 1771 would require the CPSC to establish “minimum State law requirements” which are consistent with the guidelines contained in the CPSC’s publication “Guidelines for Entrapment Hazards: Making Pools and Spas Safer.”

As a result, H.R. 1721 and S. 1771 would both create a mandatory federal safety standard from Guidelines where previously mere recommendations and “not intended as a CPSC standard or mandatory federal requirement.” When Congress left for its August recess, H.R. 1721 had 26 co-sponsors after being referred to the House Subcommittee on Commerce, Trade and Consumer Protection. Meanwhile, S. 1771, introduced July 11, 2007 by Sen. Mark Pryor (D-Ar), had 9 cosponsors in the Senate. On July 19, 2007, S. 1771 was reported favorably with amendments out of the Senate Committee on Commerce, Science, and Transportation. S. 1771 would, therefore, appear to have more legislative momentum than the nearly identical House Bill, H.R. 1721.

#### MANDATORY SAFETY STANDARD

With or without such proposed federal legislation, one can certainly expect more and more States and localities to enact statutes and code requirements which reflect the CPSC Guidelines, in particular performance standards for safety vacuum release systems (SVRS) and alternative methods for avoiding entrapment.

Assuming the CPSC Guidelines become the applicable legal standard under federal or state law, a pool or spa which does not meet such safety standards might be considered unreasonably dangerous under the circumstances. As a result, reasonable care in the normal operation, servicing or maintenance of a pool or spa might then require devices and systems in working order which meet or exceed the CPSC Guidelines to prevent entrapment by pool or spa drains. In the event of an entrapment injury, failure to provide a properly functioning safety vacuum release system or equivalent technology might provide a legal basis for negligence liability

Accordingly, the enactment of a mandatory federal pool safety standard under S. 1771/H.R. 1721 or a similarly applicable state statute or code requirement might very well reverse the outcome of any future wrongful death litigation similar to that described below involving Virginia Graeme Baker. Specifically, a pool or spa which did not meet a mandatory federal or state pool safety standard would no longer be considered as operating as intended in a normal, working condition. On the contrary, a pool or spa operating in violation of such federal or state pool safety standards would be considered unreasonably dangerous.

#### NORMAL OPERATION

In the case of *Baker v. Poolservice Company*, 636 S.E.2d 360 (Va. 2003), the estate of Virginia Graeme Baker brought a wrongful death action alleging defendant had a legal duty "not to make repairs that it knew would increase the risk of entrapment." Several days prior to the drowning death of 7 year-old Virginia, the Baker family had hired defendant Poolservice “to determine

why the spa was not working to its full functional capacity." In the course of this routine maintenance, Poolservice returned the spa's pump to its normal working condition by eliminating a clog created by hair and other foreign matter. In so doing, the restored suction to the drain cover was strong enough to entrap Virginia underwater causing her drowning death.

Poolservice's repair work did not involve the drain cover and it was not hired to perform a safety inspection of the spa or to retrofit any of its parts. Baker conceded that Poolservice was not negligent in its performance of the actual repairs of the spa: "they didn't breach the contract. They did exactly what the contract called for. They fixed the pump." However, when Poolservice repaired the pump system in the spa, Baker contended that Poolservice had increased "the risk of suction entrapment and consequent physical injury beyond the level of risk that existed before the repairs were made." As a result, Baker claimed Poolservice had a legal duty "to make use of the company's superior knowledge to warn the homeowners" of the risk of suction entrapment and "not to create or exacerbate a risk of physical harm in the course of making repairs to the spa"

In response, Poolservice argued that its repairs "did nothing beyond returning the spa to its normal operating condition" and "did not alter the product to make it more dangerous or increase the risk of harm." Moreover, Poolservice asserted that it "did not create the dangerous condition because any danger from the functioning spa [i.e., risk of suction entrapment] existed long before Poolservice ever serviced it."

The Virginia Supreme Court agreed with Poolservice. According to the court, "Poolservice's repairs merely restored the spa to its original and intended operating condition."

Baker admits that Poolservice was not negligent in performing the repairs on the spa. Poolservice did precisely what the homeowners hired it to do: return the spa to its normal, working condition. Poolservice thus did not create an unsafe condition through its repairs because any allegedly unsafe condition existed when the spa operated as intended, and had been present since the spa was manufactured and installed. Returning the spa to its normal, working condition is not a basis of liability for a repairman absent a specific undertaking to do otherwise, which is wholly absent in this case. The repair work provided by Poolservice was not a general safety check.

The spa owner requested Poolservice only to perform seasonal maintenance and did not hire Poolservice to perform a general safety check of the spa, or to perform any work on the drain cover. Poolservice competently performed the requested repair work and returned the spa to its normal functioning capacity and was under no duty to warn of any potential dangers unrelated to its specific undertaking. Poolservice assumed no duties outside the parameters of those for which it had been contracted.

As a result, the Virginia Supreme Court found Baker had failed to allege any legal basis "under which Poolservice had any duty that could create liability for Virginia's death."