



Canadian Standards Association
Etobicoke, Ontario
To the Part I Committee

Subject No. 3049

Chair: S.W. Douglas

Date: March 10, 2003

Title: Emergency Shutoff Switch, Rule 68-404(d)

Submitted by: Steve Douglas of Electrical Safety Authority, Barrie, Ontario, on January 24, 2002.

Proposal:
Request (Specifically Worded):

Add a new Subrule to 68-404 to read as follows:

68-404 (4) (Appendix B)

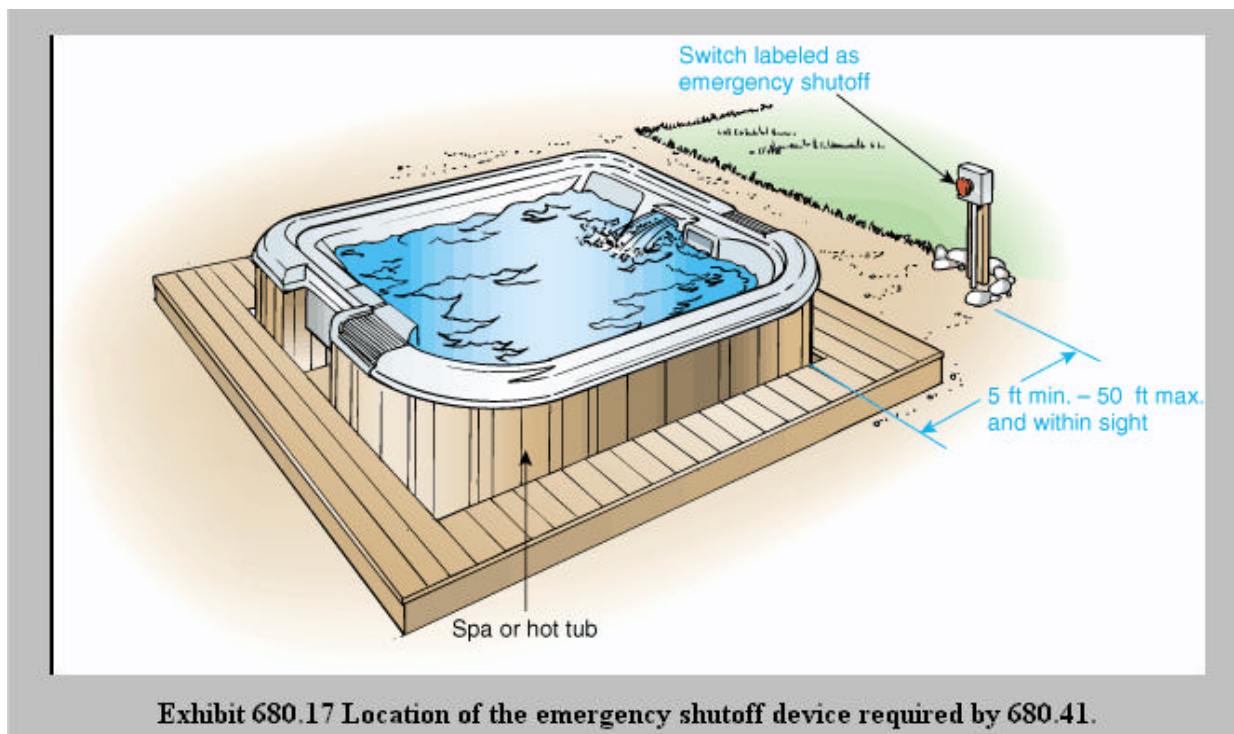
Except for single family dwellings, a clearly labeled emergency shutoff or control switch for the purpose of stopping the motor(s) that provide power to the recirculation system and jet system shall be installed at a point readily accessible to the users and not less than 1.5 m away, adjacent to, and within sight of the spa or hot tub.

Appendix B 68-404 (4)

The provisions of 68-404 (4) require a local disconnecting device for spas and hot tubs that is capable of being used in an emergency. This requirement was added to address entrapment hazards associated with spas and hot tubs. The emergency shutoff switch must be installed within sight of and at least 1.5 m from the spa or hot tub and must be clearly labeled "Emergency Shutoff." The shutoff switch can be either a line-operated device or a remote-control circuit that causes the pump circuit to open. This requirement does not apply to single family dwellings.

CEC Handbook

Add the following drawing to the CEC Handbook for Rule 68-404 (4):



Reasons for Request:

As a result of a fatality the Chief Coroner issued a safety recommendations for hot tubs. Point four of the recommendation deals directly with the electrical portion of the hot tub installation.



Attention News Editors:

Chief Coroner issues safety recommendations for hot tubs

TORONTO, Dec. 20 /CNW/ - The tragic death of a 13-year-old boy who drowned this summer after becoming trapped in a hot tub has resulted in the Office of the Chief Coroner issuing four safety recommendations aimed at preventing similar deaths.

"As a result of our investigation, we're asking owners and operators of hot tubs, whirlpools, spas or similar units to inspect their mechanical circulating equipment," said Chief Coroner James Young. "This death was unfortunate and we want to ensure something like this doesn't happen again."

Dr. Young said hot tub owners and operators should ensure that:

- Each bottom or side suction fitting has a cover plate designed to reduce the risk of entrapment;
- Two or more separately-located suction drains are connected to the whirlpool pump;
- A vacuum-release mechanism is installed between the drain and the pump;
- A clearly marked emergency shut-off switch, separate from the hot tub's timing device, is installed on a wall adjacent to the hot tub.

The Coroner's Office will ask local Medical Officers of Health and members of the Lifesaving Society of Canada to advise public hot tub owners and operators of these recommendations. The Chief Coroner will also advise hot tub designers to contact hot tub owners/operators to ensure compliance with these recommendations.

Disponible en français

www.solicitorgeneral.msg.gov.on.ca

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For further information: Dr. William Lucas, Regional Supervising Coroner
- GTA West Region, Ministry of the Solicitor General, (416) 314-4105

To view other releases from this ministry,

This proposal will also harmonize the CEC and NEC

Supporting Information:

NEC wording is as follows:

680.41 Emergency Switch for Spas and Hot Tubs.

A clearly labeled emergency shutoff or control switch for the purpose of stopping the motor(s) that provide power to the recirculation system and jet system shall be installed at a point readily accessible to the users and not less than 1.5 m (5 ft) away, adjacent to, and within sight of the spa or hot tub. This requirement shall not apply to single-family dwellings.

NEC Handbook:

The provisions of 680.41 require a local disconnecting device for spas and hot tubs that is capable of being used in an emergency. This requirement was added to address entrapment hazards associated with spas and hot tubs. The definitive publication on this issue, Guideline for Entrapment Hazards: Making Pools and Spas Safer (Pub. No. 363), is available from the U.S. Consumer Product Safety Commission, Washington, DC 20207.

The emergency shutoff switch must be installed within sight of and at least 5 ft from the spa or hot tub and must be clearly labeled “Emergency Shutoff.” See Exhibit 680.17 for an illustration of the switch location. The shutoff switch can be either a line-operated device or a remote-control circuit that causes the pump circuit to open. This requirement does not apply to one-family dwellings.

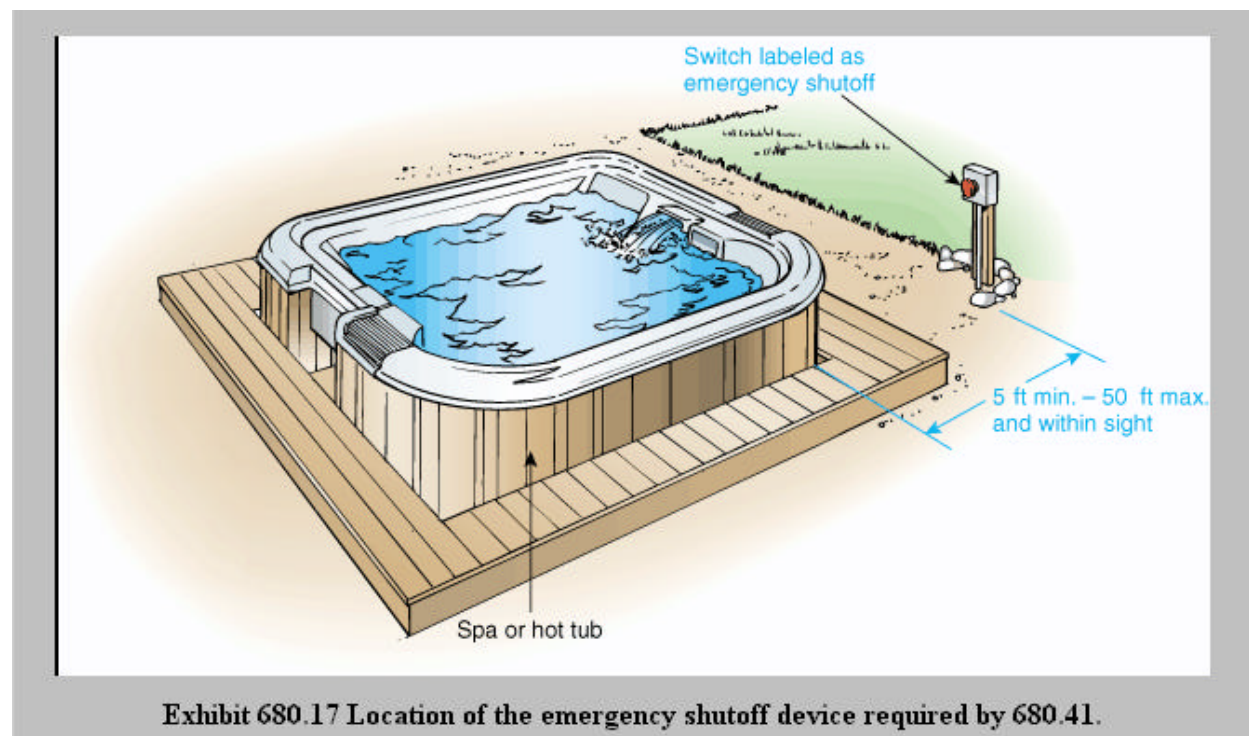


Exhibit 680.17 Location of the emergency shutoff device required by 680.41.

Subcommittee Deliberation: Six of the eight subcommittee members replied all agreeing with the proposal, four with comments. Following are the comments received:

- 1) The title should be: Emergency Shut Off Switch, Rule 68-404 (4)
- 2) I recommend that the provision of an emergency shutoff or control switch apply to all spa and hot tub installations including family dwellings. Hence, I recommend deleting the words "Except for single dwellings," from the proposed revision.
The manufactures of controls should be able to incorporate an emergency shutoff device into the face of the control box.
As there have been drowning resulting from entrapment of swimmers by the suction of pool drains I recommend the addition of a new Subrule as follows:

68-102 Controls and other Electrical Equipment

- (1) All recirculating pumps in public pools shall be capable of being deactivated by an emergency stop button that shall:
 - a) Be clearly labeled and located at a visible and easily accessible area.
 - b) Upon use activate an audible and visual signal located by the emergency stop.
 - c) Have posted above it an emergency sign containing the words IN THE EVENT OF AN EMERGENCY PUSH EMERGENCY STOP BUTTON AND USE EMERGENCY PHONE, AUDIBLE AND VISUAL SIGNAL WILL ACTIVATE shall be in letters at least 25mm (1in) high with a 5mm (3/16in) stroke.
- 3) Should distance from the hot tub be limited to 10 M?
- 4) I'm not disagreeing with the intent of the proposal. However, I think it needs some improvements. First of all, it could include explanation why it does not apply to "single family dwellings". Is the safety problem not the same wherever "SPA or HOT TUB" are installed? As well, why is the proposal dealing with "1.5M" and the actual Subrule (1) dealing with "1M"? Is there anything more or less dangerous between "Controls" and "Emergency Shutoff Switch"? Could we be consistent with the CEC and forget about the NEC? Finally, the proposed drawing for the "Handbook" shall be in accordance with the CEC (right "Rule Number" for the title of the drawing and use "Metric Units").

Chair's Proposal (Second Round):

Add one new Rule 68-102, a new Subrule to 68-404 and revised Subrule (1) to read as follows:

68-102 (Appendix B)

All recirculating pumps in public pools shall be capable of being deactivated by an emergency stop button that shall:

- 1) be clearly labeled and located at a visible and easily accessible area and,
- 2) upon use activate an audible and visual signal located adjacent to the emergency stop button and,

68-404 Controls and Other Electrical Equipment (Appendix B)

- 1) Controls for a spa or hot tub shall be located behind a barrier or shall be located not less than 1.5 m horizontally from the spa or hot tub, unless they are an integral part of an approved factory-built spa or hot tub.
- 2) Receptacles shall be installed in accordance with Rule 68-064.
- 3) Luminaires shall be installed in accordance with Rule 68-066.
- 4) A clearly labeled emergency shutoff or control switch for the purpose of stopping the motor(s) that provide power to the recirculation system and jet system shall be:
 - (a) installed at a point readily accessible to the users and,
 - (b) not less than 1.5 m of the inside walls of the spa or hot tub unless an integral part of an approved factory-built spa or hot tub, and
 - (c) within 10 m and sight of the spa or hot tub.

Appendix B 68-102

The provisions of Rules 68-102 require a local disconnecting device for public pools that is capable of being used in an emergency. This requirement was added to address entrapment hazards associated public pools. The emergency shutoff switch must be installed within sight of and at least 1.5 m from the spa or hot tub and must be clearly labeled "IN THE EVENT OF AN EMERGENCY PUSH EMERGENCY STOP BUTTON AND USE EMERGENCY PHONE, AUDIBLE AND VISUAL SIGNAL WILL ACTIVATE" with letters at least 25mm (1in) high with a 5mm (3/16in) stroke. This requirement does not apply to single family dwellings.

Appendix B 68-404 (4)

The provisions of Subrule 68-404 (4) require a local disconnecting device for spas and hot tubs that is capable of being used in an emergency. This requirement was added to address entrapment hazards associated with spas and hot tubs. The emergency shutoff switch must be installed within sight of and at least 1.5 m from the spa or hot tub and must be clearly labeled "EMERGENCY SHUTOFF." The shutoff switch can be either a line-operated device or a remote-control circuit that causes the pump circuit to open.

CEC Handbook

Add the following drawing (updated to the CEC) to the CEC Handbook for Rule 68-404 (4):

Subcommittee Deliberation (Second Round): Six of the eight subcommittee members replied. Four agreed with the proposal, three with comments, and two disagreed, both with comments. Following are the comments received:

- 1) In Appendix B 68-102, second sentence add the word "with" between the words "associated" and "public" so that it reads "....hazards associated with public pools."
- 2) I am in agreement the proposals: 68-102 (Appendix B), 68-404 Controls and Other Equipment, Appendix B 68-102 and addition of drawing to the CEC Handbook. On the issue of Appendix B 68-404(4), I do not agree with the provision to require emergency shutoffs for family dwellings. The action taken by the Coroner was in direct response to an incident in a public unit. Many of these units have been constructed without the benefit of improved guidelines and continue to pose a risk to the public. Emergency

shut offs should definitely be required on all such units.

We have consulted with many manufacturers of residential units and all such units have been built for several years with plumbing and pump sizing configurations that follow accepted safety protocols to greatly reduce the possibility of body or hair entrapment. The additional requirement of an emergency shut off would pose unnecessary burden on residential homeowner to reduce risk where measures have already been taken. I therefore recommend that this requirement not apply to single-family dwellings.

3) Proposed Rule 68-102:

- a. 68-102 will not include all pools as defined by scope 68-000 and might be better located as a general rule. (e.g. 68-072).
- b. The Appendix B proposal appears to suggest mandatory distance requirements. If this is the intent the 1.5M should be part of the rule.
- c. The Appendix B sign, signal and phone requirements appear mandatory. If this the intent they should be in the rule. Is all of this necessary to meet the Coroner's report? Will this require a staff member to be in attendance at all times to answer the phone or reset the alarm? I much prefer a more objective approach and it seems to me the proposed rule stating "be clearly labeled" is enough guidance.
- d. The emergency stoop button control circuit will require GFCI protection unless 3M from the pool. This can be expensive requirement on larger motor control circuits.

Proposed Rule 68-104:

- e. Spa and Hot Tub often locate in limited space. The 1M measurement addressed this concern and is considered "out of reach" (see 30-322 Appendix B). 1.5 M will be difficult to enforce in many instances and I can see no advantage by the proposed revision.
- f. Why is it necessary to shut down the jet system? The Coroner's report is concerned with the suction drains.

Conclusion: I supported the proposal in the first round, however after carefully considering the results achieved by implementation of the three Coroner's recommendations I am convinced the electrical modifications serve no useful purpose. On the contrary, I believe nuisance operation of these will result in most being disabled in any case.

4) The proposal is not complete. For instance, some <<phrasing>> are not in accordance with Clause C12 (Appendix C) and where is the following revised drawing mentioned at the end of the second round proposal. Also although the Coroner recommendations were for << hot tubs>>, I can understand why we can try to apply the requirements to a broader use, but I think that the proposal is going far from the original proposal so I disagree for the following reasons:

- a. There is no rationale to bear out such requirements of the emergency shutoff or control switch to all kinds of pools, especially for family dwellings.
- b. We can not require the emergency switch to be built-in controls without being aligned with Part II requirements (not a smooth transition).
- c. The addition of Rule 68-102 is another issue far beyond the original proposal.
- d. What is the goal to the audible and visual (no rationale and I totally disagree for such requirements)?

- e. Why use Appendix B to justify a rule requirement?

Subcommittee Recommendation:

In the second round it became clear to me the emergency shut off shutoff should not include single family dwellings. The following wording is similar to the proposal in the first round.

Add a new Subrule to 68-404 to read as follows:

68-404 (4) (Appendix B)

Except for single family dwellings, a clearly labeled emergency shutoff or control switch for the purpose of stopping the motor(s) that provide power to the recirculation system and jet system shall be installed at a point readily accessible to the users, adjacent to, and within sight of the spa or hot tub.

Appendix B 68-404 (4)

The provisions of 68-404 (4) require a local disconnecting device for spas and hot tubs that is capable of being used in an emergency. This requirement was added to address entrapment hazards associated with spas and hot tubs. The emergency shutoff switch must be installed within sight of and at least 1 m from the spa or hot tub and must be clearly labeled "Emergency Shutoff." The shutoff switch can be either a line-operated device or a remote-control circuit that causes the pump circuit to open. This requirement does not apply to single family dwellings.

CEC Handbook

Add the following drawing to the CEC Handbook for Rule 68-404 (4) with the following modifications:

1. Change the rule reference from 680.17 and 680.41 to Rule 68-404 (4)
2. Change the measurement wording from "5 ft min. - 50ft max. and within sight" to "1 m minimum and within sight"

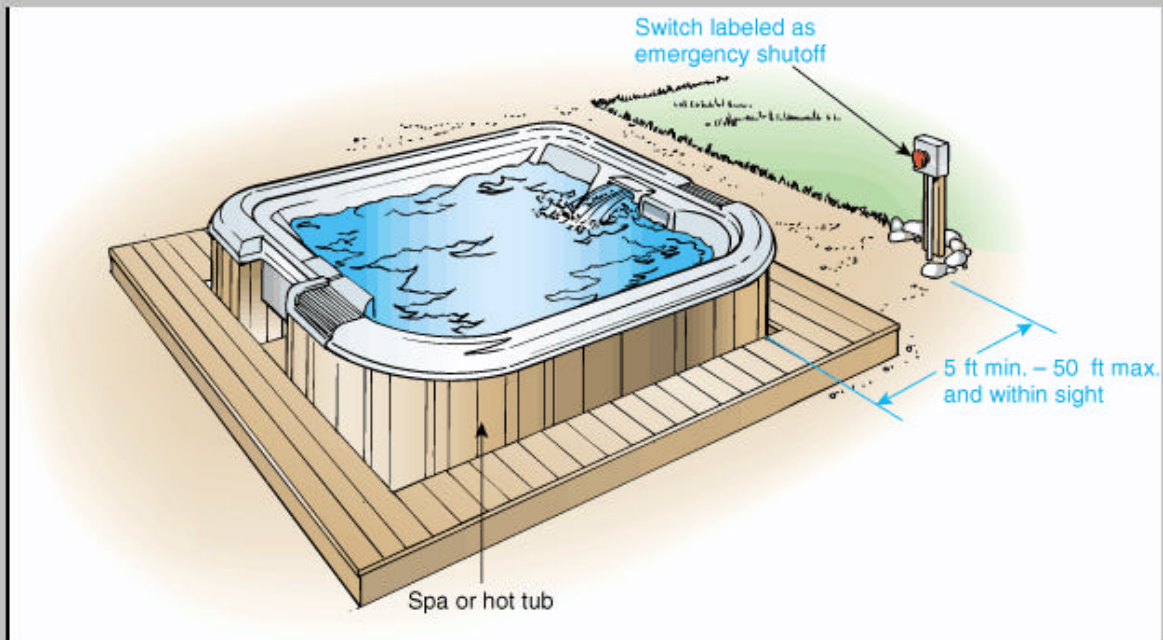


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