Code Amendment Proposal Application

Department of Consumer & Business Services
Building Codes Division
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Read the entire code amendment proposal application before completing this form. Please complete all parts before submitting your proposal and refer to the provided checklist.

APPLICANT INFORMATION

Name: Mike Stone		Date: November 4, 2022
Representing (if applicable): National Electrical Manufacturers Association		Work phone: (703) 841-3632
Mailing address: PO Box 227		Cell phone: (707) 495-8424
City: Dobbins	State: CA	Zip: 95935
Email address: mike.stone@nema.org		

PROPOSAL INFORMATION

Specialty code: Oregon Electrical Specialty Code

Code section(s): 210.8(A)(11)

Briefly explain the subject of your proposal: Delete the existing OESC amendment that removes GFCI protection for indoor wet location in dwelling unit. This is consistent with 210.8(B)(6) for non-dwelling units.

INSTRUCTIONS AND CHECKLIST

Fill in all the information above and submit this page, signed and dated, with the required supplementary information for Parts I, II, III, and IV described on page 2 of this application. This application may be submitted by mail to the mailing address above, or by email to BCD.PTSPtech@oregon.gov.

Summary checklist for the applicant:

- ■ **Part I** Code amendment language is attached in the proper format.
- ■ **Part II** Amendment proposal requirements for amending the code have been reviewed.
- ■ **Part III** Amendment proposal criteria questions have been answered and are attached.
- ■ **Part IV** If applicable, additional ORSC energy efficiency amendment proposal information is attached.

Note: One application is required for each code section you are proposing to amend. If this proposal requires changes in other sections of the code for alignment, include those changes as part of this application.

APPLICANT SIGNATURE

Signature: Mike Stone NEMA Date: November 4, 2022

***Copyright notice**: By signing this Code Amendment Proposal Application, I understand and acknowledge that the work contained in this application is original, or if not original, I have the right to copy the work. By signing this work, I understand that any rights I may have in this work, including any form of derivative works and compilations, are assigned to the Department of Consumer and Business Services Building Codes Division. I also understand that I do not retain or acquire any rights once this work is used in a Department of Consumer and Business Services Building Codes Division publication.*

Proposal – OESC Section

1. Describe the concept and purpose of this proposal.

Current OESC language is as follows (underline indicates addition to model code language, strikeout indicates deletion of model code language):

"(A)(11) Not adopted by the State of Oregon. ~~Indoor damp and wet locations.~~"

Proposed model code language is as follows (new text is underlined):

"(11) Indoor wet locations"

2. What problem in the existing Oregon code or national model code is this proposal solving? How does this amendment address the issue? If you have evidence demonstrating the problem, submit that information.

Adding GFCI protection for wet locations in dwelling units will bring this section into alignment with 210.8(B)(6) for indoor wet locations in non-dwelling occupancies. Receptacles in wet locations are a hazard regardless of occupancy type. Inclusion of the proposed model code language will increase the life safety of the general public.

Helpful information

a) **If this proposal corrects any unforeseen or probable outcomes resulting from the application of a code section, explain how.**

N/A

b) **If this proposal corrects inadequate application by a code section to a method, material or design, explain how.**

N/A

c) **If this proposal eliminates conflicting, obsolete, or duplicative code provisions or standards between Oregon-adopted codes, statutes or regulations, explain why.**

N/A

d) **If this proposal is for a fire or life safety matter, or is it otherwise needed to protect the health, safety, welfare, comfort and security of occupants and the public, explain why.**

It is a fire and life safety matter. GFCI devices were first required in the 1971 NEC. They are widely recognized, including by the U.S. Consumer Product Safety Commission, as a proven and effective method of protecting personnel from electrocution injury and death.

Please see the informational sheet at the end of this proposal. This sheet shows the impact that GFCI protection has made since first introduced into the NEC in the 1970s. This information was compiled by the Electrical Safety Foundation International (ESFI) with statistics from the Center for Disease Control and Prevention.

e) If this proposal is necessary to address unique geographic or climatic conditions within Oregon, explain why.

N/A

f) If there are alternatives to this proposal that solve the problem, explain why this proposal is the best or a necessary solution.

N/A

g) If this proposal provides for the use of unique or emerging technologies, or promotes advances in construction methods, devices, materials and techniques, explain how.

GFCI protection was first required in the 1971 NEC. This mature technology has been proven to be a reliable and cost-effective way to prevent electrocution deaths.

h) If this proposal meets any energy conservation or indoor air quality requirements, explain how.

N/A

i) If this proposal involves the adoption of an electrical or plumbing building product, note if the appropriate advisory board approved the product.

N/A

3. Has this been proposed at the national model code level. If so, explain when it was proposed, what happened, and why it was not adopted. Provide all associated national model code hearing information and background.

Yes. The proposal includes the model code language.

<u>Implementation and fiscal impact</u>

1. **Explain how the proposed provisions would be enforced? Are additional inspections or permits required? Describe any necessary equipment, training, tests or special certifications.**

Installation of GFCI protection is typically verified during the final electrical inspection.

2. **What is the fiscal impact of this proposal? Provide a cost benefit analysis and include the resources or methods you used to determine the fiscal impact.**

GFCI devices that protect 125-volt receptacles range in cost from $8.00 to $59.00. Non-GFCI receptacles range in cost from $1.00 to $3.00. GFCI circuit breakers range in cost between $59.00 to $71.00. Standard circuit breakers for 15- and 20-ampere circuits range in cost from $6.00 to $13.00. This is a cost difference of $7.00 to $53.00 per receptacle location depending on the type of GFCI protection used. These are typical retail prices found online.

Helpful information

a) **If this proposal adds to the cost of construction, explain how the added cost contributes to the health and safety of occupants, or is necessary to conserve scarce resources.**

The added cost of GFCI protection contributes to the health and safety of occupancies by protecting against injuries and fatalities from electrical shock caused by ground faults. GFCI protection for dwelling units was first introduced in the 1971 NEC.

b) **If there are any other adverse fiscal impacts or cost savings passed on to the general public, the construction industry, local and state governments, and small businesses, an interested person must describe the added or reduced cost of a proposed code amendment, and describe the adverse fiscal impact or cost savings in relation to the current Oregon specialty code.**

See item (c) below.

c) **If this proposal will affect the cost of development of a detached single-family dwelling, please indicate the cost. For the purposes of illustrating the change on the cost, please use a 6,000-square-foot parcel and the construction of a 1,200-square-foot detached single-family dwelling on that parcel. The information on the cost must be sufficient to assist the division in preparing a housing cost impact statement.**

The additional cost of GFCI protection in wet locations for 15- and 20-ampere, 125-volt receptacles in a 1,200-square-foot single-family dwelling would depend on the number of wet location receptacles installed. As previously stated, the additional cost per receptacle added typically varies from $7.00 to $53.00.

Impacted stakeholders and other specialty codes

1. **It is important that proposals be shared with stakeholders that will be impacted by them. Was this proposal developed with people or organizations likely to be affected by it? Has it been reviewed or shared with people or organizations likely to be affected by it? If so, who, and if not, why not?**

   This proposal was developed by NEMA members and staff. It aligns with the model NEC and has been reviewed by the respective Code Making Panel members and stakeholders during NEC development processes.

2. **Does this proposal impact other specialty codes or statewide programs?**

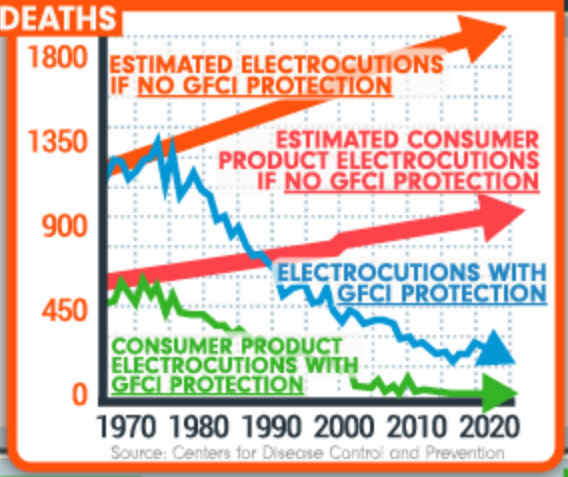
N/A

GROUND FAULT CIRCUIT INTERRUPTERS (GFCI) PREVENT AGAINST ELECTROCUTION

What if GFCIs did not exist?

Ground Fault Circuit Interrupters (GFCI) were first introduced in the bathrooms of homes as required by the **1975 edition of the National Electrical Code**. Prior to 1975, only outdoor receptacles and receptacles near swimming pools required GFCI protection. Since then, **GFCI requirements grew** as in-home electricity use and the amount of potential contact with water and electricity in homes increased.

DEATHS



Source: Centers for Disease Control and Prevention

In the ten years between 1971 and 1980, there was an estimated average of **1,101 electrocutions** in the United States, including **491 consumer product electrocutions** every year. As GFCI requirements expanded, the number of electrocutions **dropped significantly**. Between 2011 and 2022, there was an estimated average of **246 electrocutions** a year, including **41 consumer product electrocutions**.

REQUIRED GFCI LOCATIONS

- 1971 — Outdoor Receptacles
- 1975 — Bathrooms
- 1978 — Garages
- 1981 — Spas and Hot Tubs
- 1987 — Residential Kitchens
- 1987 — Unfinished Basements
- 1990 — Crawlspaces
- 1993 — All Sinks
- 2005 — Laundry / Utility Rooms
- 2017 — Commercial Kitchens
- 2020 — Outdoor Hardwired Outlets

GFCI FACTS

80% — **80% drop** in electrocutions since the introduction of GFCI protection in bathrooms in 1975

93% — **93% drop** in consumer product electrocutions between 1975 and 2020

1978 — The median American home was **built in 1978**, GFCIs are now required in **six additional locations** in homes

WHAT IF GFCI PROTECTION WAS NOT REQUIRED?

603% — There would be an estimated* **603% increase** in electrocutions

1118% — There would be an estimated* **1,118% increase** in consumer product electrocutions

According to the **U.S. Energy Information Administration**, residential U.S. energy usage has increased from 0.7 trillion kilowatt-hours in 1978 to 1.5 trillion kilowatt-hours in 2020, an **increase of 114%**

* Methodology: Average electrocution rate prior to GFCI protection (0.54 deaths per 100,000 population) x yearly population of USA. Consumer product electrocution rate prior to GFCI protection was 0.25 deaths per 100,000

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