

Electrical Vehicle Supply Circuit GFCI Protection for Personnel

Statewide Alternate Methods are approved by the division administrator in consultation with the appropriate advisory board. The advisory board's review includes technical and scientific facts of the proposed alternate method. In addition:

- *Building officials shall approve the use of any material, design or method of construction addressed in a statewide alternate method;*
- *The decision to use a statewide alternate method is at the discretion of the applicant; and*
- *Statewide alternate methods do not limit the authority of the building official to consider other proposed alternate methods encompassing the same subject matter.*

Code/edition/section: 2021 Oregon Electrical Specialty Code (OESC)--Section 625.54

Date: Issued—Aug. 3, 2022
Rescinded—Oct. 1, 2023

Subject: Electric Vehicle supply circuit —GFCI protection for personnel

Background:

National Electrical Code (NEC) Section 625.54, *Electric Vehicle Power Transfer System Ground-Fault Circuit-Interrupter Protection for Personnel*, was established in December 2016 by Temporary Interim Amendment (TIA) after the 2017 second draft was completed. While Section 210.8, *Branch Circuit Ground-Fault Circuit-Interrupter Protection for Personnel*, required Ground-Fault Circuit Interrupter (GFCI) protection for 240 volt (240v) receptacles in many locations, the TIA was developed to ensure that GFCI protection was provided on all receptacles intended to supply portable Electric Vehicle Supply Equipment (EVSE). This TIA and the requirements of Section 625.54 were not discussed by the 2021 OESC code committee or the Electrical and Elevator Board. Following the adoption of the 2021 OESC and increasing installations of EVSE, the division has received multiple reports of circuit GFCI nuisance tripping.

Discussion:

Incidents of nuisance tripping resulting from incompatibility between the internal protection on some EVSE and the receptacle GFCI protection required by Section 625.54 have been reported by inspectors and contractors throughout the state. When the GFCI protection of the receptacle was removed as part of troubleshooting the nuisance tripping stopped. The board has dealt with other instances of GFCI caused nuisance tripping by removing GFCI requirements when necessary. Based on the identified EVSE nuisance tripping, it is appropriate to allow removal of the GFCI protection as otherwise required by Section 625.54 and be replaced with a standard overcurrent device.

Conclusion:

In order to address the nuisance tripping and to bring consistency to the requirements for GFCI protection in Oregon, when the electrical contractor or equipment owner has determined an incompatibility issue between the EV charging equipment and GFCI protection due to nuisance tripping, a standard overcurrent device may be installed in place of the circuit GFCI protection.

Changes to this section were not made during the development of the 2023 NEC, and therefore, will be reviewed and revised appropriately in the next edition of the OESC.

The technical and scientific facts for the statewide alternate method are approved.

Signature on file

**Alana Cox, Administrator
Building Codes Division**

Aug. 3, 2022

Date