



COMMUNITY AND ECONOMIC DEVELOPMENT
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Notice Regarding Nuisance Tripping of GFCI Equipment

July 7, 2021

The City of Arvada is in receipt of the following variance issued by the State of Colorado Division of Regulatory Agencies (DORA) as it relates to nuisance tripping of GFCI equipment serving certain HVAC equipment:

On June 23, 2021, the State Electrical Board moved to grant a Temporary Variance to Article 210.8 (F) of the 2020 National Electrical Code as the Board found that:

- 1. The Electrical Board has received several inquiries and complaints regarding this code change, impacting ductless mini splits, and other relevant installations, causing GFCI tripping.*
- 2. HVAC manufacturer's designs have a lower voltage for the power conversion equipment and controls, and in some cases, when using a control transformer, they use the equipment grounding conductor supplying the HVAC equipment for the grounded conductor return path, which is putting a large amount of power leakage current on the equipment ground.*
- 3. Also, due to the use of the power conversion equipment, the change from AC to DC, and the ramping up and down in frequency, a leakage current could occur and be problematic.*

Additional requirements/provisions:

This Temporary Variance will expire:

- a. One-year from the date the Board grants the request and will be revisited for extension if needed;*
- b. If the National Fire Protection Association issues an applicable Tentative Interim Amendment; or,*
- c. Upon the Board's adoption of the 2023 NEC.*

For the Colorado State Electrical Board,

Joyce J. Young Program Director

For the duration of this Temporary Variance, the City of Arvada will continue to require GFCI protection per NEC 2020 article 210.8 F except where power conversion equipment is present. At the time of inspection, manufacturer information supporting the need for this variance must be available to the inspector for review and approval. Installation manuals and permits must also be on site per our usual procedures. If you have additional questions, please contact Adam Quintana at aquintana@arvada.org.