

Date September 24, 2020

Subject **Substation Fence Grounding**

“Is the intent of the CEC and the AUEC regarding substation fencing that all intermittent post must be grounded?”

Installation falls under one code, or the other, not both.

This accredited corporation appears to be accredited only for the CE Code, Part 1. “Intermittent” is not mentioned.

36-312 Grounding of metallic fence enclosures of outdoor stations

- 1) The fence shall be located at least 1 m inside the perimeter of the station ground electrode area.
- 2) The station ground electrode shall be connected to the fence by a tap conductor at each end post, corner post, and gate post, and at intermediate posts at intervals not exceeding 12 m by a conductor of not less than No. 2/0 AWG copper.
- 3) The tap conductor at each hinge gate post shall be clamped or bonded to the gate frame by a copper braid or a flexible copper conductor of at least No. 2/0 AWG.
- 4) The tap conductor shall be connected to the fence post, the bottom tension wire, the fence fabric (for which the conductor may be woven in at least two places), the top rail, and each strand of barbed wire, with the connection to the bottom tension wire, the fence fabric, and barbed wire strands made with bolted or equivalent connectors, and with the top rail connections bonded at every joint by a jumper equivalent to No. 2/0 AWG copper.
- 5) When there is a metal boundary fence in proximity to the station fence, the touch voltages within 1 m of all parts of the boundary fence shall not exceed the tolerable values specified in Table 52.

Handbook

Rule 36-312 Grounding of metallic fence enclosures of outdoor stations

Rule 36-312 adds to the requirement in Subrule 1) of Rule 36-308 for grounding of non-current-carrying metal parts in or around a station operating at high voltage. The fence is typically a metallic structure located within the area of the station ground electrode. The station ground electrodes underlying the station provide safe touch and step voltages throughout the entire station area. The fence is to be located so that it cannot be contacted by a person standing outside the station ground electrode area. Subrule 1) requires that the metallic fence enclosure of outdoor stations be located a minimum of 1 m inside the perimeter of the station ground electrode area. The grounding system for the fence is specified in Subrules 2), 3), and 4) (see Figures 36-18 and 36-19).

Figure 36-18
Grounding at corner post

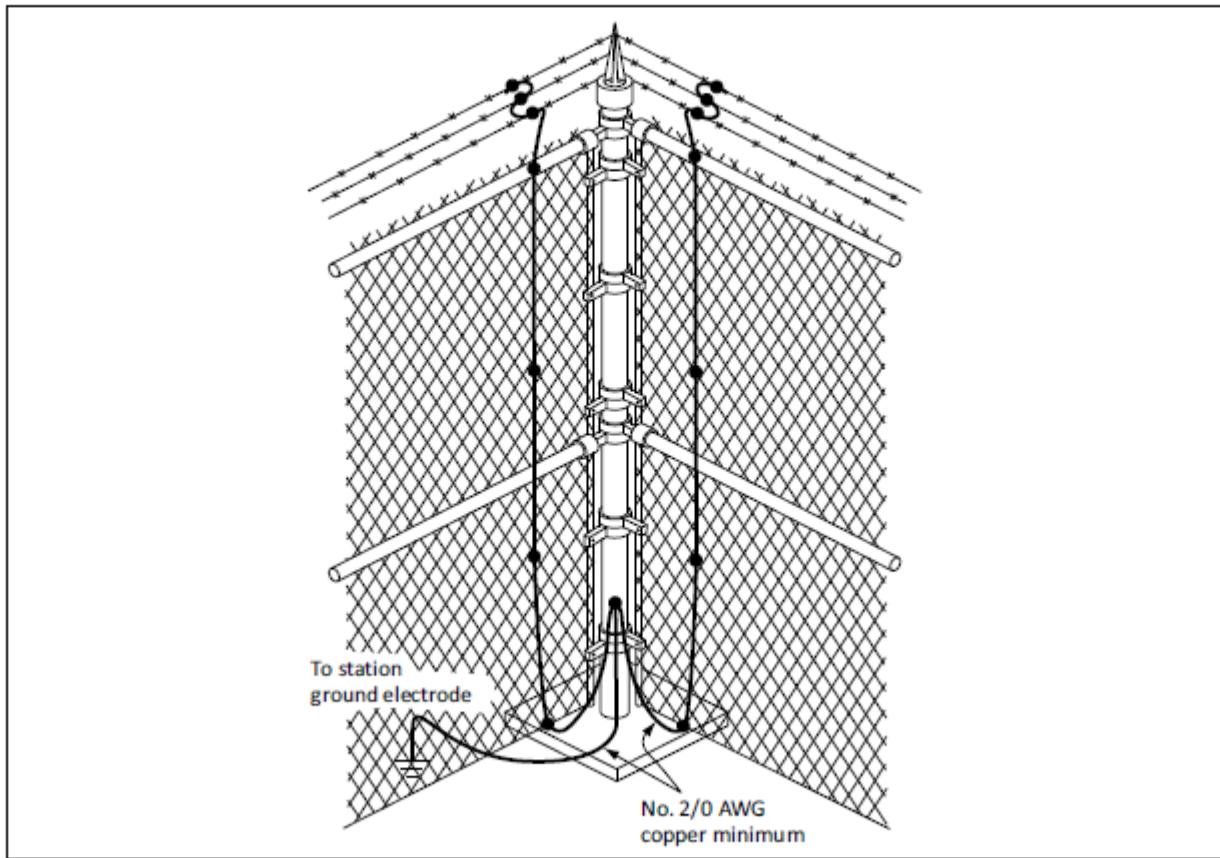
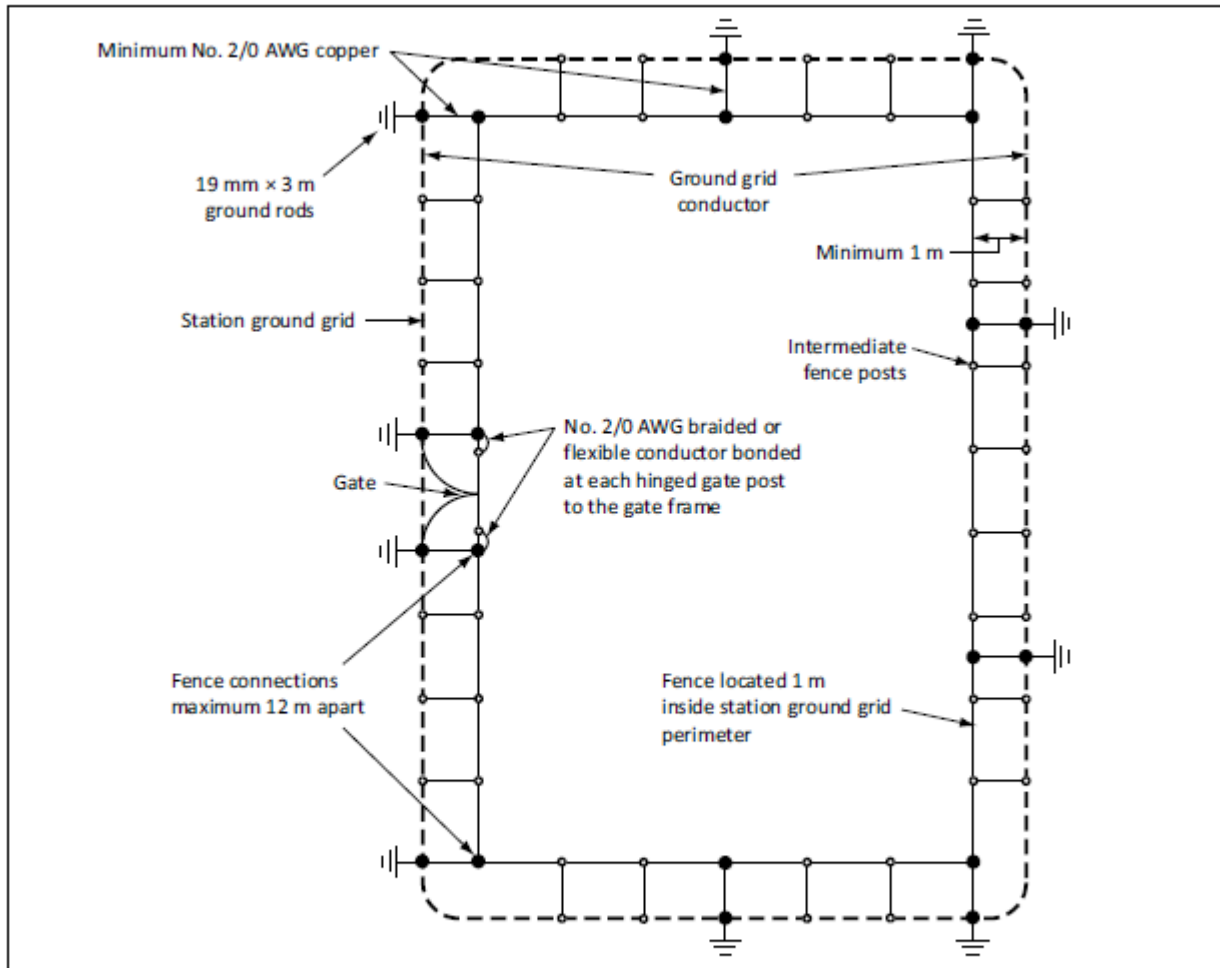


Figure 36-19
Fencing inside ground grid electrode area



Subrule 5) requires that when there is a metal boundary fence in proximity to the station fence, the touch voltages within 1 m of the boundary fence are not to exceed the limits in Table 52 (see Figure 36-20).

Figure 36-20
Boundary fence and station fence

