

## STATE BUILDING CODE INTERPRETATION NO. I-56-99

December 27, 1999

The following is offered in response to your letter in which you request a clarification of 1999 National Electrical Code, Section 250-50(a)(2) regarding the requirements for a second “supplemental” electrode.

**Question:** When city-wide water system piping is utilized as a grounding electrode and a supplemental ground rod is installed, must a second ground rod be installed if the installed ground rod does not prove less than 25 ohms resistance to ground.

**Answer:** Section 250-50(a)(2) states in part: Where the supplemental electrode is a made electrode of the rod, pipe, or plate type, it shall comply with Section 250-56, which states in part that: A single electrode consisting of a rod, pipe, or plate that does not have a resistance to ground of 25 ohms or less shall be augmented by one additional electrode of any of the types specified in Sections 250-50 or 250-52. According to an opinion received from NFPA on this issue, the second electrode cannot be the metallic water pipe itself due to the possibility that the metallic water pipe may be replaced with a non-metallic water pipe in the future. Therefore, to meet the requirements of 250-56, one of the following additional grounding electrodes would have to be installed if the supplemental rod, pipe or plate electrode does not have a resistance to ground of 25 ohms or less: The metal frame of the building or structure; a concrete encased electrode; a ground ring; other local metal underground systems or structures such as piping systems (other than those prohibited) and underground tanks; a second rod, pipe or plate electrode installed not less than 6 feet apart from the first.