

IEEE Guide for Safety in AC Substation Grounding

IEEE Power and Energy Society

Sponsored by the
Substations Committee

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IEEE Std 80™-2013
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IEEE-SA Standards Board

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Annex F is taken from Dawalibi, F., and Mukhedkar, D., “Parametric analysis of grounding systems,” *IEEE Transactions on Power Apparatus and Systems*, vol. PAS-98, no. 5, pp. 1659–1668, Sept./Oct. 1979; and Dawalibi, F., and Mukhedkar, D., “Influence of ground rods on grounding systems,” *IEEE Transactions on Power Apparatus and Systems*, vol. PAS-98, no. 6, pp. 2089–2098, Nov./Dec. 1979.

Annex G translated by T. W. Stringfield from Koch, W., “Erdungsmassnahmen fur Hochstspannungsanlagen mit Geerdetem Sternpunkt,” *Electrotechnische Zeitschrift*, vol. 71, no. 4, pp. 8–91, Feb. 1950.

Abstract: This guide is primarily concerned with outdoor ac substations, either conventional or gas-insulated. These include distribution, transmission, and generating plant substations. With proper caution, the methods described herein are also applicable to indoor portions of such substations, or to substations that are wholly indoors. No attempt is made to cover the grounding problems peculiar to dc substations. A quantitative analysis of the effects of lightning surges is also beyond the scope of this guide.

Keywords: ground grids, grounding, IEEE 80™, substation design, substation grounding

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