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IEEE Guide for the Application of Metal-Oxide Surge Arresters for Alternating-Current Systems

Amendment 1: Supplement to Consider Energy Handling Capabilities

IEEE Power and Energy Society

Sponsored by the
Surge Protective Devices Committee

IEEE
3 Park Avenue
New York, NY 10016-5997
USA

IEEE Std C62.22a™-2013
(Amendment to
IEEE Std C62.22™-2009)

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Abstract: New tests added to IEEE Std C62.11™-2012: a switching surge energy capability test (thermal energy rating), a repetitive single-impulse withstand capability test, and the inductive voltage drop effects of the internal arrester metal current carrying components determined during the front-of-wave (FOW) discharge voltage test are included in this amendment to IEEE Std C62.22™-2009.

Keywords: distribution lines, insulation coordination, IEEE C62.11™, IEEE C62.22™, IEEE C62.22a™, lightning, metal-oxide surge arrester, overvoltage, substations, surge arrester, switching surges, transmission lines

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Introduction

This introduction is not part of IEEE Std C62.22a™-2013, IEEE Guide for the Application of Metal-Oxide Surge Arresters for Alternating-Current Systems—Amendment 1: Supplement to Consider Energy Handling Capabilities.

IEEE Std C62.11, IEEE Standard for Metal-Oxide Surge Arresters for AC Power Circuits (>1 kV), has been revised with several changes that affect surge arrester application. These changes include the addition of a switching surge energy capability test (thermal energy rating), a repetitive single-impulse withstand capability test, and the inductive voltage drop effects of the arrester lead lengths determined during the front-of-wave (FOW) discharge voltage test. The application guide for station and intermediate class metal-oxide surge arresters is being amended to incorporate changes necessary to provide proper arrester selection guidance.

This amendment to IEEE Std C62.22-2009 contains the following changes:

- The discussion on energy handling capability is amended in 4.2.5. Additional information on the switching surge energy rating and single impulse withstand rating is provided in the amended 4.2.5a and 4.2.5b.
- The first two paragraphs of 5.2.1.3 are amended to provide guidance on arrester selection based on the switching surge energy capability test. Supporting data is included with the addition of Table 1.
- Guidance to account for the inductive voltage drop of the internal arrester metal current carrying components during the FOW discharge voltage test is included in the amended 5.2.2.1.

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NOTE—The editing instructions contained in this amendment define how to merge the material contained therein into the existing base standard and its amendments to form the comprehensive standard.

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