PC62.72a

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Type of Project: Amendment to IEEE Standard C62.72-2007
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Status: PAR for an Amendment to an existing IEEE Standard
Root Project: C62.72-2007

1.1 Project Number: PC62.72a
1.2 Type of Document: Guide
1.3 Life Cycle: Full Use

2.1 Title: Guide for the Application of Surge Protective Devices for Low Voltage (1000 Volts or Less) AC Power Circuits Amendment: SPD Disconnector Application Considerations and Coordination for use in Low Voltage AC (1000 V or Less, 50 or 60 Hz) Power Circuits

3.1 Working Group: 3.6.6 LV AC Power Circuit Protective Devices WG (PE/SPDLV/LV3.6.6)
Contact Information for Working Group Chair
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None

3.2 Sponsoring Society and Committee: IEEE Power and Energy Society/Surge Protective Devices/Low Voltage (PE/SPDLV)
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4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 06/2015
4.3 Projected Completion Date for Submittal to RevCom: 08/2016

5.1 Approximate number of people expected to be actively involved in the development of this project: 35

5.2.a. Scope of the complete standard: This guide covers the application of surge-protective devices (SPDs) for installation on the load side of the service equipment for 50 or 60 Hz, ac power circuits rated 1000 V rms or less.

Changes in scope: ~~The~~This ~~transient overvoltages or surge events that are described and discussed in this~~ guide ~~are~~covers ~~those that originate outside of a building or facility and impinge on a power distribution system (PDS) through~~ the ~~service~~application ~~entrance conductors. Transient overvoltages or surge events that originate from equipment within a specific facility are not within the scope~~ of ~~this document. This guide applies to~~ surge-protective devices (SPDs) ~~that are manufactured~~ for ~~connections~~installation ~~to 50 Hz or 60 Hz ac power circuits that are rated between 100 V rms and 1000 V rms. This guide applies to SPDs that are specifically identified, labeled, or listed for connections~~ on the load side of the service ~~entrance main overcurrent protective device. This guide does not cover those SPDs identified, labeled, or tested as a secondary surge arrester intended for connections on the line side of the service entrance main overcurrent protective device. The SPDs covered in this guide are those manufactured for use in an association with electrical power distribution~~ equipment ~~such as load centers, motor control centers, panelboards, switchboards, switchgear, and end-use equipment~~

installed in commercial and industrial facilities. This guide excludes SPDs associated with retail and consumer appliances and components for residential50 use. This guide does not specify or set60 limits on insulation levels of any components associated with power distribution systems or end-use equipment. In additionHz, itac is not the intent of this guide to address individual SPD component specifications associated with any specific manufacturer of surge protection products.The SPDs discussed in this guide contain at least one nonlinear component for either diverting surge currents and/or dissipating surge energy. Examples of such nonlinear components are metal-oxide varistors (MOVs), silicon avalanche diodes (SADs), spark gap tubes, or thyristors. Ferroresonators, motor-generators, uninterruptible power supplies,circuits andrated filters1000 containingV onlyrms inductive or capacitive components are not considered SPDs in the guideless.

5.2.b. Scope of the project: To define the application considerations for SPD Disconnectors and the coordination of these devices in Low Voltage AC Power Circuits. Application Consideration details, case studies, potential issues and recommendations are provided.

5.3 Is the completion of this standard dependent upon the completion of another standard: No

5.4 Purpose: The purpose of this guide is to provide users, specifiers, installers and manufacturers with guidance on the use, selection, application and installation of surge-protective devices for installation on the load side of the service equipment for 50 or 60 Hz, ac power circuits rated 1000 V rms or less.

Changes in purpose: The primary purpose of anthis SPDguide is to provide ausers, desirablespecifiers, levelinstallers of surge protection by diverting surge currents and bymanufacturers reducingwith surgeguidance voltageson to a level that can be tolerated by the PDSuse, and the equipment connected to the system. When specifying and installing any SPD in low-voltage power distribution equipment associated with commercial and industrial installationsselection, numerous application considerations should be reviewed and evaluated before installation. Failure to consider the applications or misapplications of anysurge-protective SPDdevices canfor directlyinstallation influenceon the expectedload performanceside of the SPDservice andequipment canfor result50 in undesirable effects on a PDS and/or end-use60 equipment. It is the intent of this guide to inform specifiers and users of SPDsHz, suchac aspower specifyingcircuits engineers,rated electrical1000 inspectors,V facilitiesrms engineers, or authorities having jurisdiction, of application and installation considerations for the purpose of desirable and satisfactory application of SPDsless.

5.5 Need for the Project: This project will serve to educate designers, users, and specifiers of surge protective devices (SPDs) regarding application and coordination considerations for SPD Disconnectors. An SPD Disconnector is defined as a device intended to automatically stop the flow of current to the surge protective device or surge protective components (SPCs) in response to an overvoltage, overcurrent, or over temperature event.

5.6 Stakeholders for the Standard: SPD designers, users and specifiers. Fuse, breaker and disconnect designers. Surge protective device component designers.

Intellectual Property

6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No

6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No

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7.1 Are there other standards or projects with a similar scope?: No

7.2 Joint Development

Is it the intent to develop this document jointly with another organization?: No

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8.1 Additional Explanatory Notes (Item Number and Explanation): 5.2B More clarification about scope:

The purpose for the amendment is to provide the users of the guide with detailed information and direction on the use of disconnectors in conjunction with SPDs which, in many cases, is not covered in sufficient detail in the body of the current guide. These disconnectors might be comprised of or constructed from fuses, circuit breakers, thermally activated switches, bimetallic strips, electronically controlled switches,

springs, combinations thereof, or similar mechanisms. The primary function of the disconnector is to remove power from a failed or failing SPD or surge protective component in order to prevent undesirable results while maintaining adequate surge performance. This is important to the users and designers of SPDs in the event of the end-of-service condition of the SPD due to aging, an overvoltage or surge event that exceeds the SPDs ratings (for example, a direct lightning strike).

Some key aspects of the amendment will include:
- Description of available disconnectors
- How disconnectors operate
- What the disconnector actually disconnects (entire SPD, a phase connection to the SPD, a mode within the SPD, a component within the SPD, etc.) and the impact thereof
- The differences between integral, internal and external disconnectors
- The degree of isolation created by the disconnector (isolated from power? surges? lightning?)
- SPD disconnector coordination with the available short-circuit current from the power system
- Impact of disconnectors on SPD surge ratings and capacity
- Impact of disconnectors on the protective function of the SPD with regard to surges
- Does the disconnector remove power to the SPD? To the load? Removes SPD leaving load exposed?
- How does the SPD disconnector coordinate with the upstream overcurrent protective devices? Which will operate first?

This amendment is focused on the application and coordination of the disconnectors with SPDs both from a designers and end-user standpoint.