# AC Voltage SPD Application & Location Guide

Images depicted herein are for demonstration purposes. Each facility is different, and user needs may vary. Adjust accordingly, based on equipment value and/or downtime expenses.

## SPD Standards
- **ANSI/UL 1449** - Surge Protective Devices
- **UL 1283** - EMI/RFI Filtering
- **ANSI/IEEE C62.41.2-2002** - Characterization of Surges
- **IEEE C62.62-2010** - Testing
- **IEEE C62.72-2007** - Application Guide

## SPD Application & Location

### IEEE: Category C - Service Entrance Exposure
- **NEC 285 & NRTL**: SPD Type 1, 2, or equivalent Type 4
- **N&G Bonded**: L-N and L-G are the same
- Higher available fault currents require appropriate SCCR ratings
- **Historical kA ratings**:
  - Per Phase: 400kA to 200kA per phase
  - Per Mode: 200kA to 100kA per mode
  - (Per Phase generally considered Sum of L-N plus L-G)

### IEEE: Category B - External Remnant or Internally Induced
- **NEC 285 & NRTL**: SPD Type 1, 2, or equivalent Type 4
- L-N and L-G are different – need L-N, L-G, and N-G
- **Require appropriate SCCR ratings**
- **Historical kA Ratings**:
  - Per Phase: 300kA to 100kA per phase
  - Per Mode: 150kA to 50kA per mode
  - (Per Phase generally considered Sum of L-N plus L-G)

### IEEE: Category A, maybe B, maybe C if outdoor loads are connected
- **NEC 285 & NRTL**: SPD Type 1, 2, or equivalent Type 4
- L-N and L-G are different – need L-N, L-G, and N-G
- **Require appropriate SCCR ratings**
- **Historical kA Ratings**:
  - Per Phase: 160kA to 100kA per phase
  - Per Mode: 80kA to 50kA per mode
  - (Per Phase generally considered Sum of L-N plus L-G)

### Relevant SPD Standards (1000V and Less):
- ANSI/UL 1449 - Surge Protective Devices
- UL 1283 - EMI/RFI Filtering
- ANSI/IEEE C62.41.2-2002 - Characterization of Surges
- ANSI/IEEE C62.45-2002 - Surge Protection Devices
- IEEE C62.62-2010 - Testing

### Surge Current kA ratings for all Categories are subjective. Consult SPD mfg for specific recommendations