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## GENERAL INFORMATION

### 10. DISTRIBUTED GENERATION INTERCONNECTION REQUIREMENTS (Cont'd)

Three-phase inverters and discrete three-phase voltage relays shall be type-tested with three-phase waveforms. The inverter shall disconnect or the protection equipment shall initiate a trip from the waveform generator for each of the waveforms described below.

The voltage magnitudes listed below are given in percent of rms voltage rating of the inverter, followed in parentheses by the rms voltage magnitude for 120 V rated inverters:

**Waveform 1:** A three-phase sinusoidal operating at 60 Hz and 100% of rated voltage (120 V rms) interrupted by phase A voltage depressed to 49% of rated voltage (59 V rms) for six (6) cycles beginning and ending at a zero crossing while B and C phases continue at 100% of rated voltage (120 V rms). Repeat the same test with B phase depressed, with C phase depressed, with A and B phases depressed, with B and C phases depressed, and finally with all phases depressed to 49% of rated voltage (59 V rms) for six cycles.

**Waveform 2:** A three-phase sinusoidal operating at 60 Hz and 100% of rated voltage (120 V rms) interrupted by phase A voltage depressed to 49% of rated voltage (59 V rms) for six (6) cycles beginning and ending at a zero crossing while B and C phases are increased 125% of rated voltage (150 V rms) beginning and ending at the same point of discontinuity. Repeat the same test with B phase depressed and A and C phases increased and with C phase depressed and A and B phases increased.

**Waveform 3:** A three-phase sinusoidal operating at 60 Hz and 100% of rated voltage (120 V rms) interrupted by phase A voltage depressed to 88% of rated (105 V rms) for two seconds (120 cycles) beginning and ending at a zero crossing while B and C phases continue at 100% of rated voltage (120 V rms). Repeat the same test with B and C phases depressed to the same level and for the same duration holding the other two phases at 100%.

**Waveform 4:** A three-phase sinusoidal operating at 60 Hz and 100% of rated voltage (120 V rms) interrupted by phase A voltage increased to 111% of rated (133 V rms) for two seconds (120 cycles) beginning and ending at a zero crossing while B and C phases continue at 100% of rated voltage (120 V rms). Repeat the same test with B and C phases increased to the same level and for the same duration.

**Waveform 5:** A three-phase sinusoidal operating at 60 Hz and 100% of rated voltage (120 V rms) interrupted by phase A voltage increased to 138% of rated (166 V rms) for two cycles beginning and ending at a zero crossing while B and C phases continue 100% of rated voltage (120 V rms). Repeat the same test with B and C phases increased to the same level and for the same duration.

**Waveform 6:** A three-phase sinusoidal operating at 60 Hz and 100% of rated voltage (120 V rms) interrupted by phase A voltage increased to 138% of rated (166 V rms) for two cycles beginning and ending at a zero crossing while B and C phases are decreased to 83% of rated voltage (100 V rms) beginning and ending at the same point of discontinuity. Repeat the same test with B phases

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