24.2 Following the test outlined in 24.1, the units shall be examined for compliance with items (d) and (e) of 21.6 and are then to be subjected to the Voltage Surge Test, Section 25.

25 Voltage Surge Test

25.1 Each of the units shall be subjected to the following surge voltage impulses in the order given:

a) For all appliance leakage-current interrupters, ten random applications or three controlled applications of a 6-kV surge impulse at 60 second intervals. Tripping may result, but there shall be no evidence of any potential risk of fire or electric shock.

b) Ten random applications or three controlled applications of a 3-kV surge impulse at 60 second intervals. Tripping of the appliance leakage-current interrupter is not acceptable.

25.2 Each unit is to be connected to a supply of rated voltage. The grounding lead or terminal of the unit, if provided, is to be connected to the supply conductor serving as the neutral. The unit is to be in the "on" (reset) condition with no load connected. For each application, the voltage is to have the specified initial peak amplitude of 6 or 3 kV when applied to the 60-Hz supply to the unit under test. Each of the ten applications is to be random with respect to the phase of the 60-Hz supply voltage. If three controlled applications are employed, one application is to be at essentially zero of the supply voltage wave, one at positive peak, and one at negative peak.

25.3 The surge generator is to have a surge impedance of 50 ohms. The open circuit voltage of the impulse wave shall be as specified, with each successive peak 60 percent of the preceding peak. The short circuit current of the 100-kHz ring wave shape shall be 500 A. See Figure 25.1 for the wave shape.

Figure 25.1
100 Kilohertz ring wave
(Open circuit voltage)