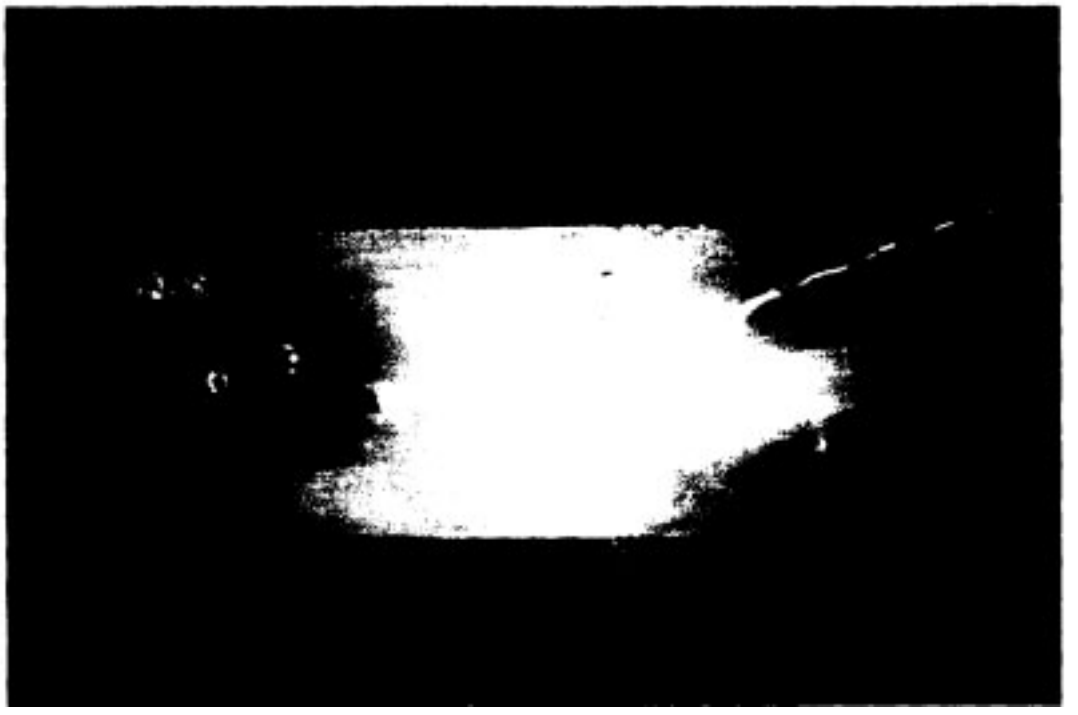

Figure **15.** Example of a strong arcing event.

Strong Arcing

Strong Arcing events were characterized by an active bright flash or glow that continued for a up to a second or more (Figure 15) with an intense electrical hum or crackling. The arc can cause much collateral damage to the insulation of adjacent wires, some of which became involved in the event. Strong arcing was often terminated with tripping of the circuit breaker.

The difference between the **oscillogram** of a flash and a strong arcing event is that the Same voltage arc waveform is repeated continuously in the arc at each half cycle for the duration of the short circuit. The phase to phase voltage at the beginning of an arc is shown in Figure 16 . The current in this arc started out in the range of ***65*** amperes **(peak).** After the other wires (icluding the phase C wire) became involved in the arc the current increased to peaks of 120 amperes. Power peaks were found of up to **15** kW (Figure 17) and a total electrical energy dissipated of about ***5*** kilojoules (kJ) .

The magnitudes of the power peaks in the strong arcing event shown in Figure 17 are about a factor of 2 **higher than** those found in the flashing event previously discussed because more wires were involved. Also different is the arc waveform is repeating continuously for hundreds of cycles in a strong arcing event, as compared to one to ten or twenty cycles for a flashing event. This increases the time in which energy is dissipated in a strong arcing event.