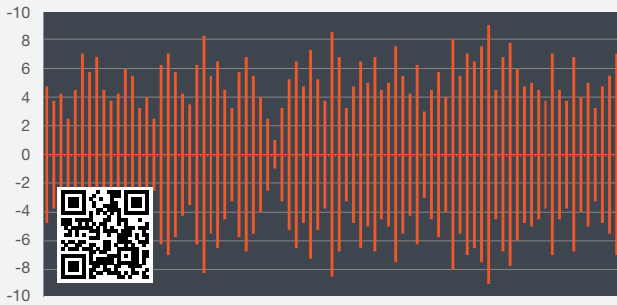


✓ **FACT:** According to NFPA.org, 80% of fatal injuries from direct exposure to electricity occurred while workers were engaged in construction, repair, or cleaning activities.

PARTIAL DISCHARGE

Signs: A reaction at the atomic level, which due to the movement of electrons, ionizes the air molecules in locations of high stress. Produces ozone and nitric oxide. Becomes corrosive when mixed with water vapor present in the air.

Signal: Popping and buzzing noises caused by deterioration of insulation.

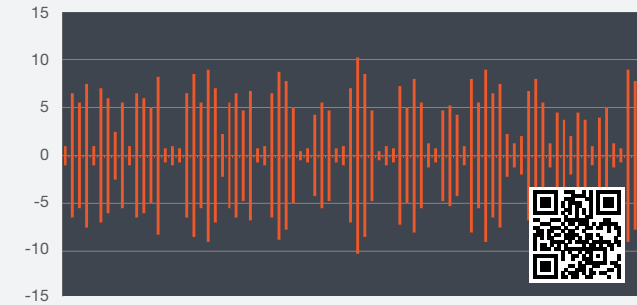


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ARCING

Sign: Flow of electricity through the air from one conductor to another.

Signals: Long duration cracking occurs. Rapid expansion of gas causes fire and explosion. Extremely violent and causes high temperature. Occurs in low voltage systems (<1kV).



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DOCUMENTATION

- Hear it
- Record it
- Analyze it (with appropriate device) through Time Waveform and FFT's
- When performing ultrasonic scans outdoors make note of the date/time and weather conditions



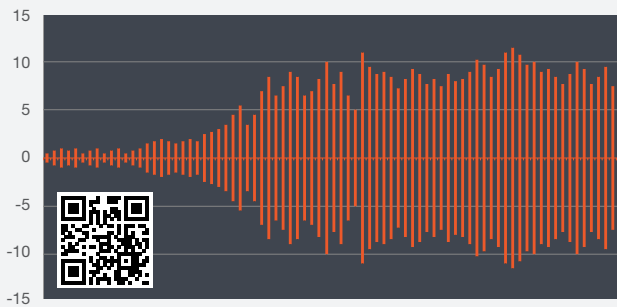
CORONA

Signs: White or teal-colored powder on cables, and distinct smell.

Signal: Constant burbling sound at 1x supply frequency, or 2x the line frequency.

Typically occurs at higher voltages (>1kV).

No IR signature.

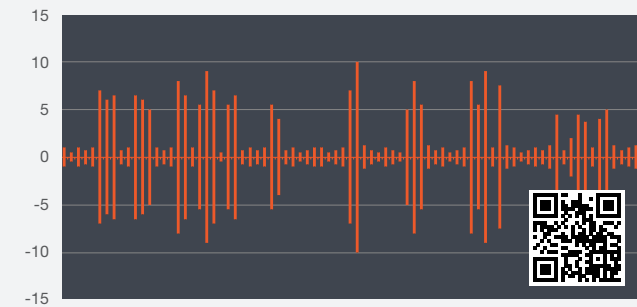


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TRACKING

Sign: Insulation degradation with branching patterns.

Signals: Series of short duration crackles. Can occur at any voltage. Typically, no IR signature.



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NOTE: Mixed signals can occur.