

THE NATURE OF THE THREAT

The nature of the threat to the communications equipment consists of overvoltage, over-current, or both. The overvoltage element can destroy the semiconductors in the PBX, KSU or CPU; while over-current can generate enough heat to cause a building wiring fire. Lightning is a major cause of overvoltage. The map below is an isokeraunic map. The isokeraunic lines represent areas of equal mean numbers of thunderstorms per year. The southeastern US, as shown in the map, has a tremendous number of storms which produce lightning. Remember, even if you are in a low density area, it takes only one lightning strike to cause thousands of dollars in damage to your communications systems.

Other threats to communications must be considered equally important.

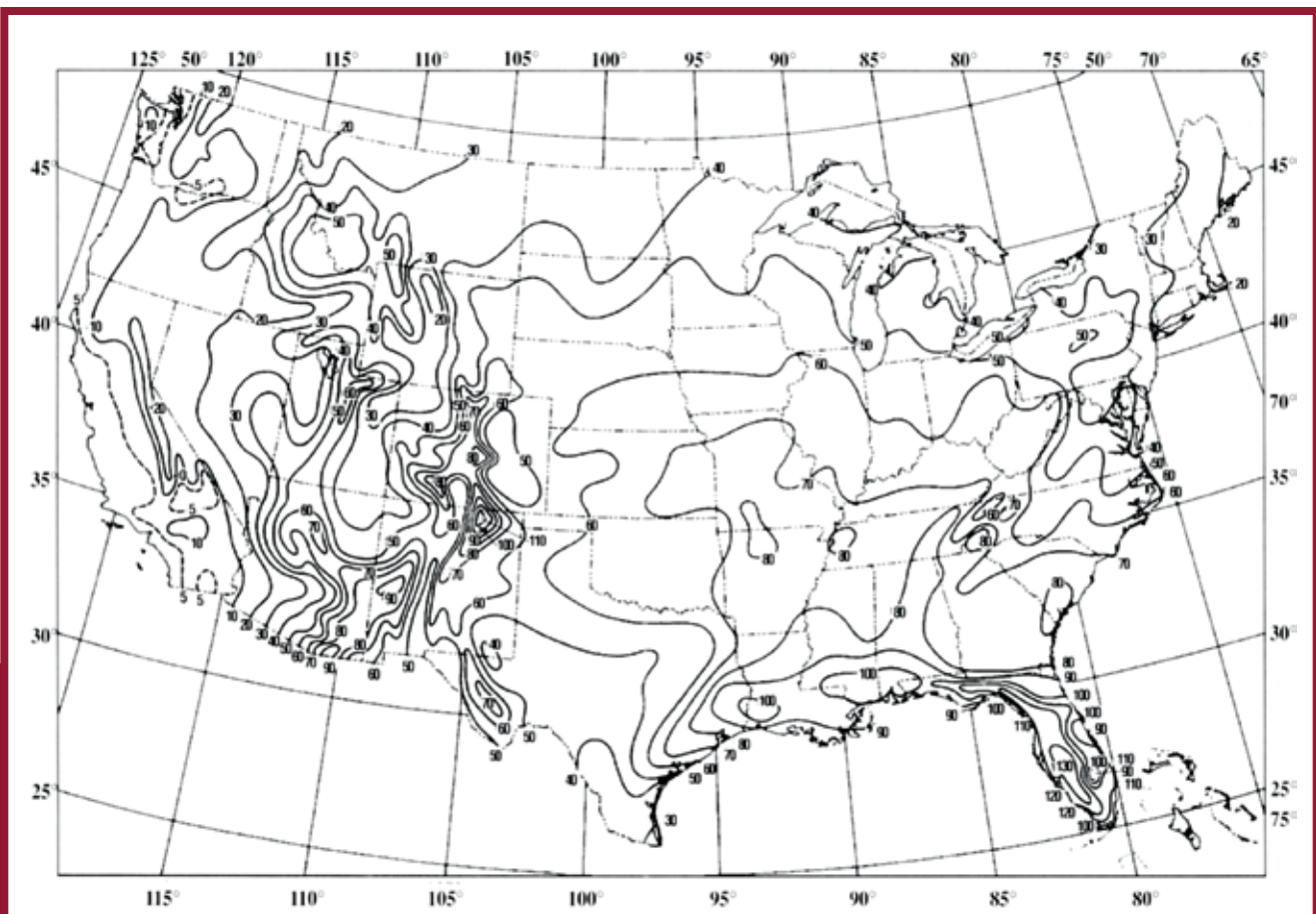
Lightning – This is the most common cause of voltage surges which can damage a communications system. The building does not have to take a direct hit for lightning to damage a system. A lightning strike within a few miles can induce a surge which can travel along aerial or buried cables into the equipment.

Power Line Crosses – The telecommunications line comes in contact with an electric power line creating excess current on the communications line. This can be caused by an electrician accidentally crossing a power line with a telephone line or a downed electric and telephone line crossing.

Conductive Spikes – Voltage surges created with the accidental momentary contact of a telephone line with a power line.

Inductive Spikes – Power surges may be caused when high power equipment is turned on or off generating an inductive kickback. These spikes are easily induced into communications cables via longitudinal coupling.

Electrostatic Discharge – Voltage surge of electrostatic energy discharged into the communication lines. The problem is usually found in dry climates, but also may be caused by the electrical field that surrounds a high voltage power facility.



Annual - Mean Number of Thunderstorms