

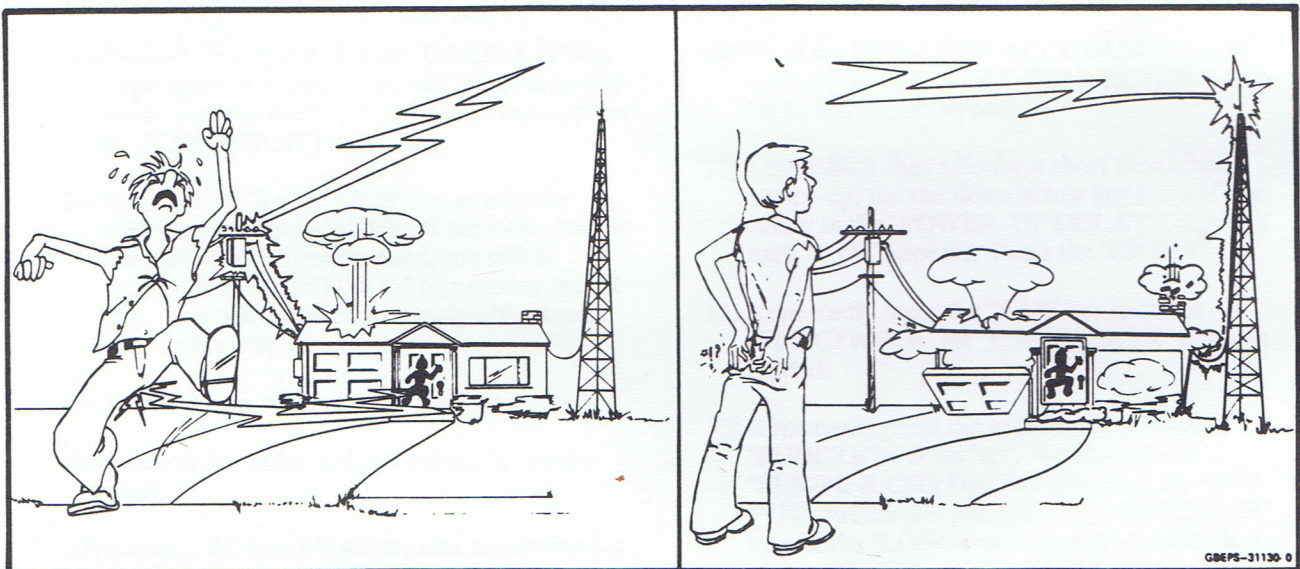
## Lightning Protection Recommendations

The conditions that make a site desirable for two-way radio are the same as those that make a site an excellent target for lighting. Proper lightning protection can completely prevent equipment damage in all but the most severe strikes and even then keep the equipment damage at a minimum. Lightning protection basically consists of preventing the strike from entering the equipment room and then preventing damage to the equipment from induced voltages and currents on power and control lines to the equipment. The following suggestions will help protect valuable radio facilities. Some products already incorporate certain suppressors as standard equipment. In these cases, additional protection is not normally required, unless dictated by unique site considerations. When such unique situations occur, consult the appropriate area office for further information.

- Keep the tower grounding resistance as low as possible. The lightning stroke current belongs in the tower

structure and grounding system, not on the transmission line.

- Use at least eight-foot long copper clad ground rods. Multiple ground rods are better than one, especially in dry climate or sandy-rocky soil areas.
- Bring the transmission line off the tower with the sharpest bend permitted by the manufacturer's specifications and make a solid bond between the tower and transmission line sheath just prior to the bend. The sharp bend acts as a spot impedance to the extremely high strike current. This shunts more of the strike current into the tower ground rather than into the equipment. Use no more or no less than the minimum bend radius wherever the transmission line changes direction and introduce a change of direction at every reasonable opportunity. Then, ground the transmission line sheath at the antenna side of each bend in the transmission line.



*Unprotected power/control lines and antenna installations can be hazardous to equipment and personnel.*