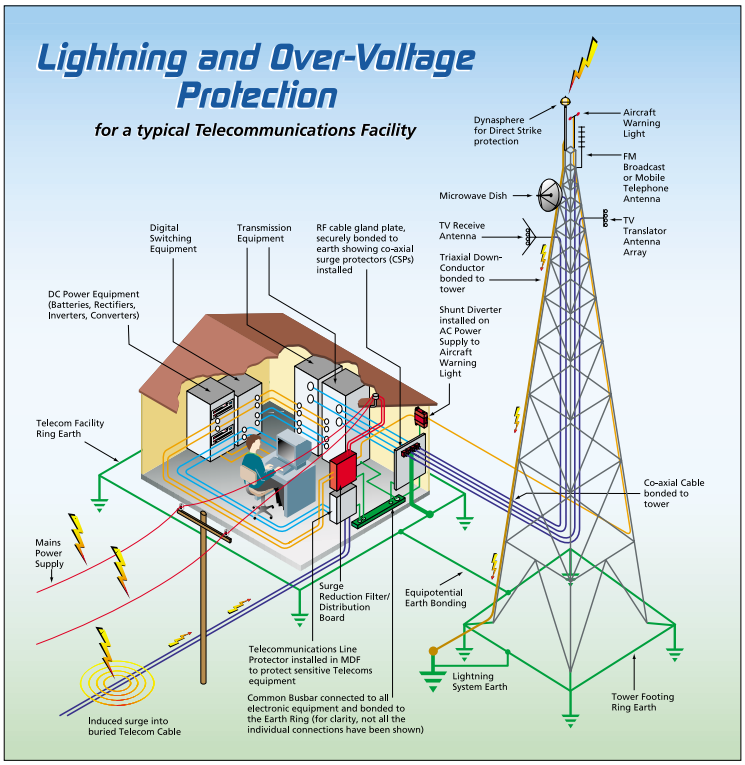
The Need for Coordinated Protection

Reliable protection of structures, industrial and commercial operations and personnel, demands a systematic and comprehensive approach to minimizing the threats caused by transient over-voltages. Grounding, bonding, lightning protection and surge protection all need to be considered for comprehensive facility electrical protection. Each of these are interdependent disciplines that need a holistic design approach to ensure the facility is not left with a vulnerable “blind spot”. The investment in surge protection devices can be wasted if “blind spots” exist.

For example, installing a surge protection device on the power supply to a programmable logic controller is of little value if the I/O lines are not also protected. In addition, an air terminal on the facility may capture the lightning energy but without a dependable ground system, this energy can not be safely dissipated. Equally, even the most expensive Surge Protection Devices (SPDs) are poor performers if a low impedance electrical ground is not provided. These interdependent disciplines are best applied when looking at a total facility rather than an individual piece of equipment or portion of the facility.

ERICO has developed its comprehensive **Six Point Plan™** to protect the overall facility, assure safety of its personnel and minimize exposure to transient damage based on cost/benefit and risk assessment principles. Implementation and coordination of all elements of the plan are required for optimal protection and long term operational viability.

The six interdependent disciplines that form our protection plan are:

1) Capture lightning strikes at a preferred point(s)
2) Conduct the energy safely to ground
3) Dissipate energy into ground
4) Equipotentially bond all grounds
5) Protect from surges on power lines
6) Protect from surges on data/signaling lines

The plan prompts the user into considering a coordinated approach to lightning protection - one embracing all aspects of potential damage, from the more obvious direct strike to the more subtle mechanisms of differential earth potential rises and voltage induction at service entry points.