LIGHTNING PROTECTION

General

Early in the design of a new building, if the building will be taller than surrounding buildings and structures, provide a Lightning Risk Analysis in accordance with Appendix L of NFPA 780. The Project Team will review the Risk Analysis and determine if a lightning protection system should be provided.

Related Sections

U-M Design Guideline Sections:
260500 – Common Work Results for Electrical
260533 –Electrical Materials and Methods
260526 – Grounding and Bonding for Electrical
260800 – Electrical Acceptance Tests

Reference Documents:
NFPA 70, "National Electrical Code"
NFPA 780, "Installation of Lightning Protection Systems"
UL 96A, "Installation Requirements for Lightning Protection Systems"

Lightning Protection System Requirements

If it is determined that a lightning protection system should be provided, provide a traditional type of system in accordance with the appropriate chapter of NFPA 780. Do not provide an early streamer emission system or a charge dissipation system.

Provide UL listed or labeled lightning protection components and cables. Provide copper or bronze components and cables. Aluminum components and cables are not acceptable.

Ground the lightning protection system using separate copper-clad ground rods in accordance with Design Guideline 16450. The building ground system rods shall not be used. Do not provide chemically enhanced ground rods or ground test wells.

Obtain an electrical inspection of the underground components before burying them.

Test the lightning protection system in accordance with Design Guideline 16950. After both the lightning protection system and the building ground system have been completed and tested, bond the two systems together. Obtain a final electrical inspection.

The lightning protection system shall be installed by an Underwriters Laboratories Master Label Installer in accordance with UL 96A. After the system is completed and tested, the Installer shall provide a UL Master Label suitable for mounting in the building's unit substation room.