



5500 E. Loop 820 S. #205 / Fort Worth, TX 76119
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Energy Control Systems is a full service contractor for lightning protection, surge suppression, grounding and bonding across all areas of commercial, and industrial applications. With over 25 years in the industry space and over 100 years collective experience in our senior staff we have the capacity and bandwidth to support everything from a full scale design and installation at an oil refinery to supplying our proprietary dissipation components to specification for your own designs. We pride ourselves most on the turnkey solutions that we provide based upon our understanding of how lightning interacts with the environment as it is discharged. Certified by both the Lightning Protection Institute and UL, ECS designs lightning protection and grounding systems compliant with relevant standards including:

NFPA 780

Air Force 32-1065

NASA KSC-STD-E-0012E

Motorola R56

API 545

NAVSEA OP 5

IEEE

UL 96A

Lightning is generated as an atmospheric buildup of ions becomes an electric discharge. It is at that point of discharge that many things can happen to disrupt business operations, destroy property, and even take lives. While we respect that we cannot stop lightning from striking we do know that we can modify its source and its path to ground in an effort to mitigate the risks associated with this powerful natural force. We take a disciplined approach to protecting you and your property through these 3 steps.

3.01 Protect the structure: A system of UL Listed lightning rods and conductor properly installed and grounded will direct the energy from a lightning strike to earth safely and quickly preventing the buildup of energy on a structure that can cause a fire.

3.02 Protect the electrical distribution systems: Even though we have safely directed the energy to earth there is still the very real possibility of inductive coupling through your electrical circuits which can wreak havoc on everything from heavy duty air handlers to sensitive security and alarm systems. Properly installed surge protection will limit the damage to appliances and critical electronic systems.

3.03 Modify the potential strike location: Dissipation of the ion charge over time to reduce the likelihood of a strike or directing the strike to a specific location with an active system in order to protect other areas are two ways that we can further mitigate your risk once you have a properly designed and installed lightning protection system in place. Our engineered solutions are used to augment the lightning protection system for an added level of protection.

3.04 Take soil resistance measurements and design an optimum grounding system that will provide a stable low resistance and low impedance dissipation path for lightning discharges.



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GENERAL:

- 1.01 Objective: To provide safety for the facilities and personnel by preventing damage to the structure caused by lightning.
- 1.02 Standards: The following specifications and standards of the latest issue form a part of this specification:
 - (1) Underwriters Laboratories, Inc., (UL)
Installation Requirements for Lightning Protection Systems
 - (2) National Fire Protection Association, (NFPA)
Standard for the Installation of Lightning Protection Systems
 - (3) Underwriters Laboratories, Inc.,
Lightning Protection Components
 - (4) American Petroleum Institute
Standard for the Installation of Lightning Protection Systems
- 1.3 System Design: The work covered by this section of the specifications consists of furnishing all labor, materials and items of service required for the completion of a functional and unobtrusive lightning protection system.
- 1.4 Quality Assurance: The lightning protection system shall conform to the requirements and standards for lightning protection systems of UL96A and NFPA 780.

PRODUCTS:

- 2.01 Standard: The system to be furnished under this specification shall be the standard product of a manufacturer regularly engaged in the production of lightning protection equipment and shall be the manufacturer's latest approved design. The equipment shall be UL listed and properly UL labeled.

All equipment shall be new, and of a design and construction to suit the application where it is used in accordance with accepted industry standards and UL and NFPA requirements.

- 2.02 Equipment: Provide and install a complete lightning protection system in compliance with the specifications and standards of the most current editions of the National Fire Protection Association's Lightning Protection Standard, and Underwriters Laboratories Lightning Protection Standard.
- 2.03 Materials: All lightning protection materials and components shall comply in weight, size and composition with UL and NFPA lightning protection material requirements for this type of structure.



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All materials shall be aluminum, copper, bronze, or stainless steel. Class I materials shall be used on structures not more than 75 feet in height. Class II materials shall be used on structures over 75 feet in height.

EXECUTION:

- 3.01 Installation: All equipment shall be installed in a neat, workmanlike manner. The system shall consist of a complete conductor network at the roof and include air terminals, wire conductor, connectors, bonds, down leads and proper ground terminals.
- 3.2 Coordination: The lightning protection installer will work with other trades to ensure a correct, neat and unobtrusive installation. It shall be the responsibility of the lightning protection installer to assure a sound bond and interconnection with other ground systems.