STATEMENT OF WORK
FOR
SJAFB FIGHTER RAMP
LIGHTENING PROTECTION SYSTEM (PERSONNEL)
7 August 2026

OVERVIEW: The primary purpose of this project is to perform a site survey, data collection and create a detailed Lightning Risk Assessment for a Lightning Protection System (LPS) for aircraft parking ramps on Seymour Johnson Air Force Base, North Carolina. This assessment will determine if a system can be created to ensure a safe working environment for personnel during local lightning events, allowing for the uninterrupted performance of critical aircraft maintenance. A key objective is to eliminate the current requirement for personnel to take cover when lightning is within a five-mile radius. While an LPS currently exists for equipment and facilities, this new system's primary focus is the protection of personnel on the flight line.

DESCRIPTION OF WORK: The objective includes the following concepts:
Site Visit, Data Collection, & Detailed Lightning Risk Assessment that will allow the Government to assess if the LPS system can reduce or eliminate a potential lightning hazard for maintenance personnel.

Perform an initial site visit to SJAFB to collect the following pertinent information:
• Details of existing aircraft sunshade LPS design and grounding topology
• Structural details of aircraft sunshades
• Existing equipotential bonding measures
• Surge suppression measures
• Incoming services to aircraft sunshades (facility power, communications, fuels, gases, etc.)
• Information on expected occupancy of aircraft sunshades structures
• Details on specific operations performed within and adjacent to the aircraft sunshades (emphasis on any operations involving transferring of fuels or propellants)
• Work envelope that extends outside the aircraft sunshades
• Identification of “keep out” zones where lightning protection elements cannot be installed
• Review of SJAFB current policies on inclement weather safety, including utilized weather/lightning services, warning criteria, and resume-to-work criteria
• Review of existing lightning safety protocols, egress routes, lightning-safe structures, etc.
• Review how any LPS would interact with and protect areas containing explosives, specifically addressing risks to munitions and on-aircraft systems such as ejection seats and flares.
• Evaluate and mitigate the potential for concrete spalling on the ramp surface due to a lightning strike

Additionally, provide the following information in a report:
• Document structure characteristics (construction, grounding, bonding, surge suppression, etc).
• An evaluation of all critical operations performed by aircraft maintenance personnel (including operational envelope).
• Document locations, storage, and existing safety procedures for ordnance, munitions, fuels.

• Evaluate existing lightning warning criteria, data sources, and return-to-work policies.
• Collect historical event history and document observed effects.
• Provide all supporting data that supports your report.

During the site visit close coordination with SJAFB leadership, maintenance, engineering, and other personnel who are intimately familiar with the construction, maintenance, and operations at the aircraft sunshade structures. Perform an NFPA 780 detailed Lightning Risk Assessment (LRA) to assess the lightning risk to personnel based on the collected data. The results of the detailed LRA will be published in a report to SJAFB. Based on the calculated risk, provide tailored recommendations and specify risk mitigation strategies to:
• Modify existing lightning protection measures and/or add new lightning protection measures to reduce direct/indirect lightning effects to personnel and assets below tolerable risk threshold (per NFPA 780).
• Reduce personnel risk for flightline operations located under aircraft sunshades below the tolerable risk threshold (per NFPA 780).
• Modify existing procedures to allow Flightline operations under the sunshades to continue safely during thunderstorm conditions.

SYSTEM COVERAGE AND TYPE: Provide a comprehensive LPS covering the entirety of aircraft parking ramps, approximately 15 acres. The system must ensure the safety of personnel performing maintenance tasks on and around aircraft. The system must be effective enough to allow for the safe continuation of work and eliminate the "lightning within 5 miles" work stoppage requirement. While personnel protection is the primary goal, the system must also provide protection for aircraft, ground support equipment, and facilities (e.g., sunshades).

A list of applicable Federal, State, and industry standards are referenced below. This list is not all-inclusive, and other references may be required. The latest revision for all applicable standards, including those not listed specifically in this document, constitutes the criteria for the statement of objective.

UFC 3-501-01 Electrical Engineering
UFC 3-560-02 Electrical Safety
UFC 3-210-64 (Assumed, based on user input. The A-E shall verify the correct UFC for lightning and grounding.)
UFC 1-200-01 DoD Building Code
AFMAN 91-Series publications for safety and mishap prevention.
NFPA 780 Standard for the Installation of Lightning Protection Systems
NFPA 70 National Electrical Code (NEC)
ICC International Building Code – 2021 Edition (IBC 2021)
ANSI/ASCE Minimum Design Loads for Buildings and Other Structures
ACI 318 Building Code Requirements for Reinforced Concrete