

D.2 Maintenance of Lightning Protection Systems

D.2.1 General. Maintenance of a lightning protection system is extremely important even though the lightning protection design engineer has taken special precautions to provide corrosion protection and has sized the components according to their particular exposure to lightning damage. Many system components tend to lose their effectiveness over the years because of corrosion factors, weather-related damage, and stroke damage. The physical as well as the electrical characteristics of the lightning protection system must be maintained in order to maintain compliance with design requirements.

D.2.2 Maintenance Procedures

D.2.2.1 Periodic maintenance programs should be established for all lightning protection systems.

The frequency of maintenance procedures is dependent on the following:

- (1) Weather-related degradation
- (2) Frequency of stroke damage
- (3) Protection level required
- (4) Exposure to stroke damage

D.2.2.2 Lightning protection system maintenance procedures should be established for each system and should become a part of the overall maintenance program for the structure it protects.

A maintenance program should contain a list of more or less routine items that can serve as a checklist and establish a definite maintenance procedure that can be followed regularly. It is the repeatability of the procedures that enhances the effectiveness of a good maintenance program.

A good maintenance program should contain provisions for the following:

- (1) Inspection of all conductors and system components
- (2) Tightening of all clamps and splicers
- (3) Measurement of lightning protection system resistance
- (4) Measurement of resistance of ground terminals
- (5) Inspection or testing, or both, of surge suppression devices to determine their effectiveness compared with similar new devices
- (6) Refastening and tightening of components and conductors as required
- (7) Inspection and testing as required to determine if the effectiveness of the lightning protection system has been altered due to additions to, or changes in, the structure

D.2.3 Maintenance Records. Complete records should be kept of all maintenance procedures and routines and should include corrective actions that have been or will be taken. Such records provide a means of evaluating system components and their installation. They also serve as a basis for reviewing maintenance procedures as well as updating preventive maintenance programs.

Surge Protective Devices in MCC and Service Panels Preventive Maintenance:

1. Inspect the SPD periodically to maintain reliable system performance and continued surge protection.
2. Periodically check the state of the diagnostic display panel LED status indicators.
3. Routinely use the built-in diagnostics to inspect for inoperative modules.