TP3. LIGHTNING PROTECTION OF EQUIPMENT (LV & SIGNAL SYSTEMS)

Duration: 02 Days

Overview:

This course is designed to provide comprehensive knowledge and develop skills on surge related risk assessment using standard techniques, preparation of BOQs and other related technical reports, designing of surge protection schemes for power and signal systems, overseeing the implementation of designed systems, selection of materials and maintenance.

Who should attend?

Engineers, senior technical staff and technical administrative staff in Power generation, transmission and distribution, Communication industry, Broadcasting companies, Building construction, architect and civil engineering, Government engineering sectors, Insurance sector, Banking, civil administration and other service sectors, Defence technology, Outdoor construction and operation, Maintenance and safety engineering, Ports, airport & aviation and hydrology, Leisure parks and recreation (Golf courses, swimming pools, stadiums, etc.), Petrochemical industry**,** Hotels, hospitals and office premises, Control systems and automation industry, Meteorology, atmospheric, HV and insulation and other related research and other industries and services

At Course Completion:

At the successful completion of the course the participants will be able to understand the basic engineering concepts of threat level evaluation and protection against lightning transients, design surge protection systems for power and signal networks in commercial and industrial installations, to select the best suited surge protective components for a given assignment, troubleshooting of problematic installations and perform routinely maintenance and record keeping

Outline:

Lesson-1: Wiring systems, power system anomalies, over current and earth fault tripping devices, strategic positioning of sophisticated equipment, Brief introduction to shielding effectiveness of materials for electromagnetic RF and microwave regions

Lesson-2: Need for protection, Damage statistics, Coupling mechanisms, Protection scenario, Modes of protection, Peak current handing capacity, let-through voltage, MCOV, follow-current etc., Classes of surge protectors, Types of surge protectors, Zonal concept of protection, SPD selection criteria, Installation concerns, Low frequency grounding, Test impulses and testing procedures

Lesson-3: Transmission of surges through signal lines, protection scenario, signal line protection devices, installation concerns, effective internal cabling, outdoor cabling, micro link connections, grounding of receivers, high frequency grounding, Test impulses and testing methods, Location selection for IT and other sophisticated equipment, Shielding and bonding of network systems

Lesson-4: Characteristics of Spark gaps, GDTs, MOVs and SADs etc., advantages and drawbacks of each type, Hybrid systems, Behaviour under test impulses, Review on international products, Manufacturing feasibilities

Lesson-5: Q & A on specific surge protection issues, designing of a comprehensive surge protection system for a given large-scale installation (e.g. Hospital)