

Electrical Substation

GTPL offers complete turnkey solution for Electrical System required for Cooling Tower packages in all sectors complying to the Indian Standards / IEC Standards and with good engineering practices. Electrical engineering team of GTPL comprises of experienced engineers who are capable to execute the projects including Design, Supply and Erection, Commissioning and testing of the electrical equipment/system.

Substation and Switchyard: Erection of sub-station includes supply, installation and commissioning of various equipment such as HV/MV Transformers (Power and Distribution), Isolator, Circuit Breakers, Power Centre Control (PCC), Motor Control Centre (MCC), Capacitor Panels for power factor improvement, Protection & Controlling System, Monitoring system including the Man – Machine interface with the main plant control system (PLC/DCS), Earthing & Lightning protection arrangement etc. GTPL also provides the necessary civil and structural arrangement for all the above electrical equipment.

GIS Panel /Power Control Centre / Motor Control Centre: GTPL provides Isolation Breaker panel with differential protection (receiving end relays, restricted earth fault relay system etc.) related to the electrical sub-station protection system.

PCC/MCC Panel: It consist of the breaker/contractor – bimetallic relay arrangement as individual Starters Module at different control voltage level with double front or single front draw-out type/fixed type as per requirement of the system. The Variable Frequency Drive (VFD) system can also be provided as per the requirement .The panel is provided with Bus Duct arrangement for incoming supply from the transformer to PCC/MCC bus.

The entire bus/incomers/ bus couplers is also equipped with Metering and all type of protection system with bus coupler arrangement provided with auto change-over as well as manual change-over system.

HV / MV Power and Distribution Transformer: GTPL provides High Voltage /Medium Voltage transformer as per the requirement of cooling tower package. Design is based on the consideration of proper sizing of transformer with electrical load requirement for the cooling tower package.

Rotating Equipment – HV / MV Motors: GTPL offers High voltage and Medium voltage motors which are generally used to drive the circulating pumps as well as the cooling tower fan motors respectively. The selection of motor is based on the power required at input of the shaft so that the cooling tower package can run smoothly. The selection of motors is based on the area of application such as hazardous & non hazardous area which is as per the requirement of the system/customer. The motors & pumps are provided with ON/OFF switching by means of the Local Push Button Station (LPBS) provided near the drive so that it can be easily switched ON/OFF locally .

Illumination system: The cooling tower package will be provided with compactable lighting fixtures and the necessary accessories required for mounting lighting fixtures. The system is also equipped with receptacles required for future maintenance work. Calculation for lumens required in the cooling tower area as well as the surrounding area of cooling tower is taken care during detailed engineering stage. The illumination package will be controlled through the main lighting distribution board & the local lighting panel separately.

Cables & Wires: GTPL is capable of providing the Power, Control Cables & Cabling System required for the package. The laying of cable from the source to destination will be carried out by means of underground trench or the cable tray with necessary supporting arrangement. While selecting the cables, various factors are taken into consideration so that smooth operation can be carried out.

Earthing & Lightning System: GTPL carries out earthing & lightning protection of the offered cooling tower package. Proper calculation is carried out by following Indian Standards for the same. All the electrical equipments, current carrying parts & structural parts are properly earthed to protect Human Being, System and Machinery from any untoward condition. Lightning protection is also provided for the protection of cooling tower & surrounding area from lightning & storms.

Accessories: GTPL also provides the engineering solution for the various systems such as Battery Charger Panels with batteries, UPS system, Variable frequency Drives & Panels, Ventilation system, Air-conditioning system, Fire fighting system etc.