



ELECTRICAL POWER CONSULTANCY & SOLUTIONS

DONVEY is established by a group of engineering executives from utility/ industrial services of Electrical systems with more than two decades of design /execution / operating experience in power system.

We provide complete engineering solutions to ensure reliable and good governing of Electrical power system. We offer design of power systems and protection systems, testing and maintenance of electrical equipments, Analysis of Power system and condition monitoring of electrical equipments.

Our Major services include

- DESIGN, CONSULTANCY AND SOLUTION
- ERECTION OF ELECTRICAL EQUIPMENTS
- TESTING AND COMMISSIONING
- CONDITION MONITORING
- ANNUAL MAINTENANCE
- POWER QUALITY ANALYSIS
- ANALYSIS OF POWER SYSTEM PROBLEMS
- TRAIN FIELD AND MAINTENANCE ENGINEERS REGARDING PROPER MAINTENANCE OF EQUIPMENT AND PROPER COORDINATION OF PROTECTION SYSTEMS

DONVEY POWER CONTROL SYSTEMS PVT. LTD.,

NO. 47, Udhaya Nagar, Porur, Chennai – 600 116.

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customersupport@donvey.com | www.donveypower.com



Detailed Design and Engineering for HV / EHV substations and industrial electrification projects.

ELECTRICAL ENGINEERING SERVICES

- Preparation of Single line Diagram
- Preparation substation /switchgear and control room layout
- Short circuit force - cantilever strength calculations and sag tension calculation
- Detailed designing of complete substation/switchgears
- Substation grounding(Design Calculations)
- Lightning protection calculation
- Indoor and outdoor lighting layout calculation
- Calculation for Transformer, CT, VT, cable, Battery and charger sizing
- Cable voltage drop calculation
- Cable schedule, Route layout and termination schedule
- Design of Protection System
- Relay Coordination and Short circuit Study
- Relay and Control panel Engineering
- Relay Setting Calculations, Recommendations and Protection Selectivity Study
- Panel General Arrangement Drawings
- Schematic Drawings
- Bill of Material
- Wiring Table
- Panel Internal View
- Panel Cut Out Drawings

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ERECTION OF ELECTRICAL EQUIPMENTS

- Unloading of Electrical equipment
- Transporting the equipments to their allocated locations as per customer drawings
- Proper alignment of foundation Of the equipments
- Centre line alignment of electrical equipments with necessary clearance
- Proper installation of Electrical equipments
- Proper laying of Earthing mats
- Cable laying and termination
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ELECTRICAL ENGINEERING SERVICES –PRE COMMISIONING

- Pre commissioning test of all substation equipments including Transformers, CT's, PT's, Circuit breakers, Isolators and Relays etc.,
- Pre Commissioning/ periodical testing of Protective relays of all type, check for its stability of actuation and complete functions.
- Measurement of earthing resistance
- Training customer regarding maintenance of electrical equipment in coordination with suppliers.

ADDITIONAL SERVICES

- BOQ & GTP's for Pre Bid engineering
- Drawing out specification for electrical equipments and projects based on customer's requirements
- Technical assistance for sourcing and procurement of electrical equipment
- System load flow study.
- Study of transients, harmonics in the system and design of filters to filter them.
- SCADA Integration services for projects.
- Preparation of feasibility reports and detailed project report for electrification projects.
- Vendor Evaluation and Third party inspection of equipment before dispatch.

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CONDITION MONITORING OF ELECTRICAL EQUIPMENT

Management of the aging problem of electrical equipment including Power transformers, CT's and PT's, Circuit breakers and cables has become the most critical issue facing today's substation managers and engineers. DONVEY assist customers in monitoring the electrical equipment and suggesting methods for life enhancement and avoid sudden breakdown, minimize outage time, reduce maintenance cost and extend the lifetime of assets.

DONVEY educates customers and does conditional monitoring- both Online and offline monitoring of functioning of electrical equipments including Transformer, Circuit breaker, CT's, PT's and batteries.

DONVEY has are representing following ONLINE MONITORING EQUIPMENTS.

- Online DGA monitoring system of Morgan Schaffer System, Canada (CALISTO series)
- Online monitoring system of Bushing and PD for Transformers, generators and motors of M/s Dynamic Rating-USA
- Online Composite monitoring system of Transformers of M/s Dynamic Rating - USA.
- Online monitoring system of Circuit Breakers by M/s Dynamic Rating – USA.
- Online monitoring system of Cables by M/s Dynamic Rating – USA.
- Online monitoring system of Circuit Breakers by M/s Dynamic Rating – USA.
- Online monitoring system of Isolators by M/s EHT International – USA.

DONVEY also does offline assessment of Electrical equipment including SFRA of Transformers, Capacitance and Tan- δ of CT's , PT's and Generators.

DONVEY conduct pre commissioning test of conventional outdoor substations and Gas insulated substation.

DONVEY conducts periodical monitoring of Generator system and assess the conditions (with the measurement of capacitance, Tan-delta, and if needed PD) and suggests for improvements.

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MAINTENANCE OF SYSTEMS

DONVEY is backed by service of engineers with experience in maintenance/ analysis of power system faults and testing of electrical equipment

DONVEY offers the following:

- Annual maintenance for substations and electrical equipment in industries & power sector.
- Take up Electrical works of cement plants, sugar plants, steel plants, refineries and process industries to avoid major breakdowns due to failure of Electrical systems and extend the services for improvement to the existing equipment.
- Educates customers regarding modern trends in maintenance –preventive, online and offline monitoring of electrical equipments, proper coordination of protection system.
- Train engineers/staff of the customer on functions of electrical equipment, routine day to day maintenance of equipment, operational procedures for the system with quality and economy. Also train the engineers/ staff on safety and security in operations of the system with training on restoration of power for emergency requirement on isolation from the utility/self-power system.
- Conducts routine tests on pre-agreed schedule to continuously monitor the condition of electrical equipment/ protection system and assure the certainty of protection.
- Will attend to the emergency problems in substation/equipments and give consultancy to bring back them to normalcy in shortest down period.
- Can take up the complete management of the electrical system with experienced/ trained staff of DONVEY

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POWER QUALITY ANALYSIS

Power Quality variations such as momentary interruptions, voltage sags, switching transients and harmonic distortions can impact customer operations, causing equipment damages and significant costs in lost production and down time. DONVEY has the capability to measure and analyze the quality in the power system and provide a customized solution plan for system improvement and also track performance indices.

Measurements are carried out by Grade A POWER QUALITY ANALYSER in accordance with industry standards of IEEE 519 / IEC 61000-4-30 and following activities will be carried out by DONVEY.

a) Industrial power quality monitoring

1. Energy and demand profiling with identification of opportunities for energy savings.
2. Harmonic evaluation to identify transformer loading concerns, resonance concerns, mal operation of equipment.
3. Voltage sag evaluation to identify sensitive equipment and possible opportunities for ride through solutions.
4. Power factor evaluation to identify proper operation of capacitor banks, resonance conditions etc.
5. Motor starting evaluation to identify switching problems, inrush current concerns etc.

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b) Power System performance assessment

1. Equipment performance trends, correlation with system performance trends and identification of conditions that may need attention.
2. Voltage sag characterizing and assessment to identify the cause of Voltage sags and examining mitigation technique.
3. Capacitor switching monitoring to characterize switching transients.
4. Performance indices calculation and reporting for system performance bench marking and for prioritizing of system maintenance and improvement investment.
5. Capacitor performance assessment
6. Voltage regulator performance assessment
7. Transformer loading for loss of life, harmonic loading impacts etc.
8. Feeder load monitoring and predictive assessment of future loads.

After detailed study, customized solution including mechanically switched/ thruster switched capacitors, LT/HT Automatic PF Control panel. Fixed and automatic Harmonic filters, Dynamic Reactive power compensator will be given to mitigate the risk.