

## Online Training Course summary

### High Voltage Substation Technologies

- HV Gas-Insulated Substation: Design, operation & maintenance – 3 modules (ELHVSGIS)
- GIS F35-145kV: Design, functions, operations & maintenance – 2 modules (ELF3512)
- HV Air-Insulated Substation: Transformers, circuit breakers, disconnectors, surge arresters and instrument transformers - 6 modules (ELHVSAIS)
- HV Air-Insulated Circuit Breakers (ELHVS3)
- Live Tank Circuit Breaker GL 315 to 318 Operation & Maintenance - 2 modules (ELGL12)
- Dead Tank Circuit Breaker DT1 from 72,5 to 245 kV Operation & Maintenance - 2 modules (ELDT12)
- Power Transformers(LVHVS2)
- HV Disconnectors (ELHVS4)
- HV Instrument Transformers (ELHV01)
- HV Protection & Control (ELHV02)

### Safety and Environment

- SF<sub>6</sub> emission impact - 3 modules (ELEI123)
- Safety awareness – 3 modules (ELES123)

### HV Substation architecture

- HV Substation Structure & Diagrams (ELAHV1)
- Power Plant Layout & Generator Circuit Breakers (ELAHV2)

### HVDC Systems and Flexible AC Transmission Systems

- HVDC (ELHVDC1)
- FACTS (ELFACT1)



## HV/MV Trainers animated courses Summary

### Electrical Risk Prevention

- Electrical safety for managers - Qualification levels overview (F1001)
- Electrical safety for non-electricians (F1010)
- Electrical safety for non-electricians - Retraining (F1011)
- Electrical safety for electricians working at low voltage (F1020)
- Electrical safety for electricians working at low voltage - Retraining (F1021)
- Electrical safety for electricians working at low, medium and high voltage (F1030)
- Electrical safety for electricians working at low, medium and high voltage - Retraining (F1031)

### Environmental Risk Management

- SF<sub>6</sub> gas recovery regulation EC 517-2014 - For inexperienced personnel (V0032)
- SF<sub>6</sub> gas recovery regulation EC 517-2014 - For experienced personnel (V0033)
- SF<sub>6</sub> gas recovery regulation EC 517-2014 - Evaluation and certification (V0039)
- Handling procedures for SF<sub>6</sub> and its mixtures according to IEC 62271-4 standard (V0010)
- Safety in explosive atmosphere - Application - Electrical and mechanical - Level 1 (F5020)
- Safety in explosive atmosphere - Theory - Electrical and mechanical - Level 2 (F5030)

### Transformers

- Distribution transformers - Operation and maintenance (C4312)
- Introduction to power transformers (A4201)
- Power transformers - Definition and operational constraints (A4212)
- Power transformers - Fundamentals for specialists (A4213)
- Power transformers - Operation and maintenance (C4242)
- Power transformers - Design and specification (A4214)
- Power transformers - OLTC - Operation and maintenance (C4532)
- Power transformers - Oil sampling and analysis (C4233)

### Industrial Solution

- Generator set – Operation and maintenance (E1142)
- Generator set – Control and coupling (E1232)
- Industrial site between 1kV and 50 kV - Operation (B3032)
- Industrial site - Operation analysis (B3033)

### Air-insulated Switchgear

- GCB - Fundamentals (A9103)
- GCB FKG1 - Maintenance and breakdown repair (V9542)
- GCB FKG2 - Maintenance and breakdown repair (V9442)
- Introduction to HV circuit breakers (T002)
- CB GL type up to 250 kV - Operation & maintenance or erection & commissioning (V5442)
- CB GL type above 250 kV - Operation & maintenance or erection & commissioning (V5642)
- DTGB - Operation & maintenance or erection & commissioning (P003)
- CB HGF-FX-FXT-S1 type - Operation and maintenance (P002)
- Hybrid compact switchgear assembly – HYpact – Erection and Commissioning (TIR059)
- Disconnectors and earthing switches from 36 kV to 550 kV (V7131)
- Introduction to instrument transformers (A5312)
- Instrument transformers – Maintenance and breakdown repair (C5342)

### Gas-insulated Substation

- Introduction to gas-insulated substation (T003)
- Gas-insulated substation B105 type - Maintenance and breakdown repair (X4442)
- Gas-insulated substation T type - Operation and maintenance (X6142)
- Gas-insulated substation F35-3/4/5 type - Maintenance and breakdown repair (TIOE002)
- Gas-insulated substation B65 type – Maintenance and breakdown repair (TIOE003)
- Gas-insulated substation B95/212 type - Maintenance and breakdown repair (TIOE004)



### Monitoring Devices

- CBWatch-2 Monitoring circuit breaker (V8142)
- BWatch-3 Monitoring gas insulated circuit breaker (X8142)
- RPH type - Synchronizing relay point on wave (V8342)
- PDWatch Monitoring partial discharges (X7033)
- MS 2000 I MS3000 - Monitoring power transformers (TIR066)

### HVDC Systems and FACTS

- Introduction to HVDC (HVDC001)
- HVDC – Design studies (HVDC002)
- FACTS – Fundamentals (FACTS002)

### Advanced Power Protection Systems

- Introduction to industrial installations protection (D2102)
- Protection of AC generators (D2402)
- MV/LV industrial installations with digital protection and MiCOM relays (D2502)

### Smart Grid

- Introduction to Smart Grid (EMS036)
- Smart Grid – Fundamentals (EMS037)

### Electrical Network

- Introduction to power network (GEE003)
- Understand electrical energy transmission activity (A0102)
- High voltage products (A0103)
- From production to distribution: the paths to energy (A0201)
- Transmission products and solutions overview (A0202)
- High voltage substation environment (A0203)
- Low voltage industrial installations – Design (A1212)
- High voltage industrial installations – Design (A2112)
- Compensation of reactive energy in a disrupted environment (A3401)
- Quality of energy (A3402)
- Power System Engineering (PSEC 101-PSEC 106)
- Power System Planning and Advanced Applications (PSEC 201-PSEC 205)
- The Power Market, Energy Economics and Strategic Planning (PSEC 301-PSEC 306)
- Emerging Technologies (PSEC 401-PSEC 404)

### Asset Performance Management

- Analytics for Asset Management (A0401)

### Training Center Contacts

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[www.GEGridSolutions.com/services/hv-mv-training.htm](http://www.GEGridSolutions.com/services/hv-mv-training.htm)

