

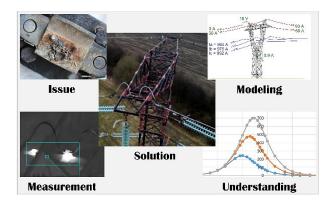
R&D DEPARTMENT OVERVIEW

The Research and Development department within EGU – HV Laboratory has a vast and long-term experience in consultancy and development in the electric power engineering area.

The R&D department deals with a wide spectrum of problems occurring in networks and substations with respect to the high voltage engineering, overvoltage, insulation, transients, and behavior of HV systems in general.

MAIN ACTIVITIES

- Transmission and distribution network analysis
- Optimization of overvoltage protection in substations and on lines
- Studies of all kinds of transients in networks using ATP–EMTP and EMTP–RW software
- Field overvoltage (6 kV-420 kV) measurement and monitoring
- Line and substation grounding system studies and measurements, assessment of touch and step voltages
- Insulation coordination studies
- Analysis of HV equipment failures and damages
- HV cable performance studies
- Calculation and measurement of electric and magnetic field 50 Hz
- Measurement and localization of RFI
- Measurement and calculation of overhead line noise
- Mitigation of resonances and ferroresonances in HV transmission and distribution networks – electromagnetic transients during black–starts and in island networks
- Electric and magnetic field simulations and modeling - COMSOL Multiphysics



MAIN PROJECTS

- ACM project Automatic Central Monitoring of CEPS network
- Partial discharge detection on HV equipment in substations by the in-house developed VYZER detector
- Contactless monitoring of switching transients by the in-house developed SEMPR sensor
- Performance of insulators under natural pollution
- ET-LEADS project Impact of lightning events on transmission and distribution systems

OTHER PROFESSIONAL ACTIVITIES

- Standardization activities (IEC, EN, ČSN, other technical standards)
- Long-term experience in CIGRE / IEC working group activities
- Membership in IEEE (PES and DEIS societies)
- Participation in many research projects
- International research activities

MAIN CUSTOMERS

Electricity transmission and distribution companies, Design companies of HV and MV power networks, ČEPS a.s. – Czech Transmission System Operator

