

- 1 110/20KV TRANSFORMER FAULT
 - 1.1 ANALYSIS OF THE FAULT RECORD
 - 1.2 THE COMPLEX TRANSMISSION BEHAVIOUR OF POWER TRANSFORMERS
 - 1.3 SHORT CIRCUIT CALCULATION USING SYMMETRICAL COMPONENTS
 - 1.4 MATRIX CALCULUS AND INTERPREDATION OF THE FAULT
- 2 20KV MULTIPLE EARTH FAULT
 - 2.1 ANALYSIS OF FAULT RECORDS FOR A PHASE-PHASE EARTH FAULT WITH DIFFERENT BASE POINTS
 - 2.2 DISCUSSION OF THE CIRCUIT DIAGRAM AND SWITCHING STATE
 - 2.3 DERIVING THE SEQUENCE OF EVENTS
 - 2.4 DETERMINATION OF THE REASONS FOR BLACK OUT
- 3 CT SATURATION
 - 3.1 CT PARAMETERS
 - 3.2 ANALYTICAL CALCULATION OF SATURATION PARAMETERS
 - 3.3 EXAMPLE LINE PROTECTION
 - 3.4 EXAMPLE MACHINE PROTECTION
- 4 220KV EARTH FAULT ON A PARALLEL LINE CIRCUIT
 - 4.1 MUTUAL COUPLING
 - 4.2 ANALYSIS OF THE FAULT RECORDS
 - 4.3 CALCULATION OF THE THEORETICAL SHORT CIRCUIT VALUES
 - 4.4 VERIFICATION OF THE CALCULATION BY MEANS OF COMPARISON WITH THE MEASUREMENTS
 - 4.5 DISCUSSION OF THE IMPACT OF MUTUAL COUPLING
- 5 400KV – AUTO RECLOSING AND ENVOLVING FAULT
 - 5.1 ANALYSIS OF THE FAULT RECORDS OF DIFFERENT RELAYS
 - 5.2 DERIVING THE SEQUENCE OF EVENTS
 - 5.3 SHORT CIRCUIT CALCULATION AND VERIFICATION OF THE MEASUREMENTS
 - 5.4 DISCUSSION REGARDING THE PRINCIPLES OF DISTANCE MEASUREMENT
- 6 FAULT LOCATOR FOR MULTIPLE FED SHORT CIRCUITS
 - 6.1 DISCUSSION OF THE CIRCUIT DIAGRAM AND SWITCHING STATES
 - 6.2 SYNCHRONISING OF FAULT RECORDS
 - 6.3 FAULT LOCATION USING SIGRA © 4 SPECIAL FEATURE

All the faults going to be analysed are real world examples, which have been analysed and examined as part of our commissioning and consulting activities. The program SIGRA © 4 will be used as analysis tool. The participants will receive well-founded basics, methodical advices and extensive experiences in analysing power system faults.