

# Electrical Condition Management

## Benefits

- Longer life of the equipment
- Guaranteed performance of the equipment
- Reduction of failures
- Lower risks for operation outages

Electrical condition management performed both on-line during operation and off-line during outages extends the life time of the equipment and guarantees its performance.

## ON-LINE MEASUREMENTS FOR GENERATORS AND LARGE MOTORS

The condition of the electrical insulation system is the most important factor as to the life time of generator, motor and transformer.

With proper measuring techniques, defaults can be predicted. Measurements are performed on-line during operation or off-line during outages.

- Partial discharge measurement to determine condition of the insulation system of stator winding
- Shaft voltage analysis to determine condition of rotor winding and excitation system
- Grounding shaft voltage and current analysis to determine harmful leakage currents
- Rotor winding impedance vs rotation speed and rotor flux to determine condition of rotor winding

## OFF-LINE MEASUREMENTS FOR GENERATORS AND LARGE MOTORS

- Partial discharge measurement for stator winding, also slot specific measurements
- Loss factor measurements
- Insulation resistance and winding resistance measurements
- High voltage tests
- Stator steel core test; ELCID

## CONDITION MONITORING FOR ELECTRICAL MOTORS

### For high performance

The condition monitoring of electric motors, at power plants and industrial facilities, guarantees their performance in all conditions. Our condition monitoring concept covers several highly specialised monitoring methods starting from critical analysis, planning of condition management programme, commissioning measurement, condition audits and condition management outage test during operation.

Our concepts enable the execution of different condition monitoring actions from routine check-ups to advanced special measurements, both mechanical and electrical, and failure analysis.

## CONDITION MONITORING FOR TRANSFORMERS

### For lower risks and longer life

- We perform electrical condition monitoring of transformers for detecting and follow-up of failures and predicting the consequences and results.
- Our condition monitoring covers electrical wiring, core, coil and conductor, the solid paper insulation and insulation oils.
- We also perform commissioning measurements and expert services for factory acceptance tests.

The regular condition monitoring analysis and optimised maintenance decrease the transformer failures and the risks for operation outages and lengthen the life cycle of transformers.