

**REPAIR AND OVERHAULING****REWINDING****ELECTRICAL TESTING****FIELD SERVICES****VIBRATION ANALYSIS****LASER ALIGNMENT****DYNAMIC BALANCING****THERMOGRAPHY****NDT (MPT & UT)****CONDITIONING MONITORING****BOROSCOPE INSPECTION****GROWLER TESTING****BRAKE EFFICIENCY****MODIFICATIONS AND UPGRADES**

Intersel Dowding and Mills (IDM) is the leading service provider for rotating equipment in the Middle East for all industries including, Power Generation, Oil and Gas, Water, Steel, Cement, Petrochemicals, Marine and others. We have been in the business of repairing and servicing of electrical motors, generators, brakes, pumps, transformers since 1986.

Our dedicated field service teams are at your site whenever you need us, working for you around the clock. Intersel Dowding and Mills workshop and engineers provide support for the field service teams. We are dedicated to ensuring fast turnarounds and high-quality field service.

Quality and Reliability is at the core of the company's business. ISO 9001, 14001, 45001

IECEx Certified Facility.



Workshop Facility

- **Total covered area:** 9568 sq. m
- **Lifting capacity up to 80T:** Demag Cranes (50T, 30T, 25T, 10T x 3)
- **Lathes (3 nos):** Max Capacity Diameter 2.5m x Weight 25T x Length 6m
- **Baking Ovens (2 nos):** (3m x 3m x 3m) & (1.2m x 1.2m x 1m)
- **Test Panels:** Phenix Technologies upto 6.6KV, 109A, 150 Medium Power
- **Dynamic Balancing:** Schenck make -12T / Dia 2M / L 6M / RPM 210-1680

MOTOR HEALTH ASSESSMENT

Motor Condition and Reliability Evaluation (MotoCARE) Program

MotoCARE Program is a comprehensive testing and diagnostic procedure for assessing induction and synchronous motors. It can predict practically, any electrical or mechanical fault well in advance. It utilizes all of the test technologies listed below:

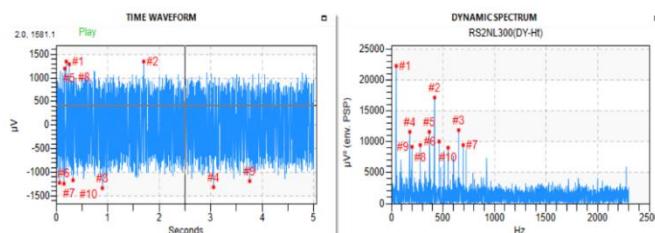
ON-LINE TESTING

Vibration Spectrum Analysis
 Acoustic Emission Analysis
 Infrared Thermography
 On site rotor balancing

OFFLINE TESTING

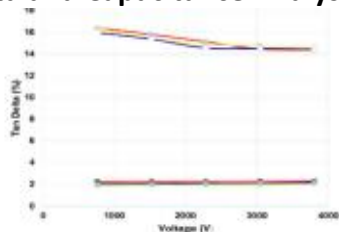
Partial Discharge Analysis
 Tan Delta and Capacitance Analysis
 Surge Comparison Test
 Winding Circuit Analysis
 High-Potential Withstand

Acoustic Emission Analysis



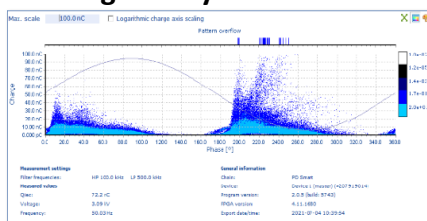
Acoustic Emission Analysis consider the first line of defense for finding defects that can lead to asset failure. It helps to detect, measure and analyze friction and impacting in mechanical systems

Tan Delta and Capacitance Analysis



This test is used to assess the condition of the ground insulation. Typically performed by applying high voltage in steps and seeing the change in values and comparing with international standards. Can identify problems such as moisture content, contamination, voids and aging.

Partial Discharge Analysis



This test is complementary to the Tan Delta test and is more sensitive for localized faults. It can detect problems such as corona, loss of stress grading treatment, voids and de-bonding between the conductors & the insulation.

GENERATOR HEALTH ASSESSMENT

Generator Condition and Reliability Evaluation (GenCARE) Program

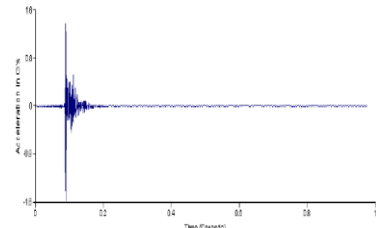
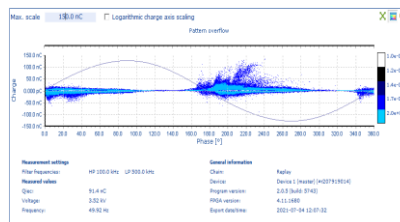
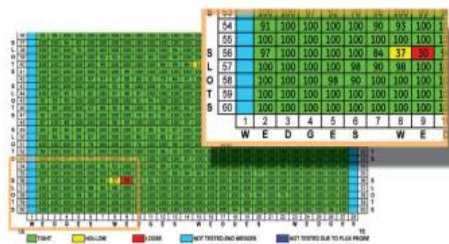
GenCARE Program is a comprehensive testing and diagnostic procedure for assessing generator condition. It can predict practically any fault well in advance, utilizing all of the test technologies listed below.

ON-LINE TESTING

Vibration Spectrum Analysis
Acoustic Emission Analysis
Infrared Thermography

OFFLINE TESTING

Partial Discharge Analysis
Tan Delta and Capacitance Analysis
Stator Wedge Tightness Assessment
Natural Frequency Test
ELCID
RSO



GenCARE uses all of the technologies used in **MotoCARE**. In addition, the following key technologies are being used:

ELCID

Stator core defects can lead to localized heating which will rapidly damage the coil insulation to premature failure. Such defects can be identified at very early stages using ELCID technology, which maps the magnetic properties of the core to find imperfection.

Natural Frequency Test (NFT)

Generators and Motors have inherent vibration forces at 100 Hz and any stator coil or support structure with a natural resonant frequency coinciding with the operating frequency can lead to mechanical failure. NFT can identify such potential problems well before they result in premature failure.

Repetitive Surge Oscillography Test (RSO)

Generator rotors can have interturn shorts which will lead to thermal vibration and excitation problems. An RSO test can identify such insulation problem in the early stages of formation and prevent a catastrophic future winding failure.

Stator Wedge Tightness Assessment

The stator coils must be held firmly in core by wedges to prevent unwanted harmful coil vibrations that damage the coil slot insulation prematurely. Loose wedges can be identified before the coil fail and prevent expensive future repairs.

TRANSFORMER HEALTH ASSESSMENT

TransCARE Program is a comprehensive testing & diagnostic procedure used for assessing the condition of power and distribution transformers. The transformer's electrical and mechanical condition can be determined and corrected before expensive failure occur using the following test technologies.

- Partial Discharge Analysis
- Tan Delta and Capacitance Analysis
- Excitation Current Measurement
- Insulation Resistance and Polarization Index
- Turns Ratio
- Winding Resistance
- Oil filtration

Turns Ratio Test

Transformer are used to step voltages up or down to produce the required output voltage and to isolate the primary from secondary supplies, so the transformer turns ratio is an important parameter to verify since it determines the output voltage.

Excitation Current Measurement

The exciting current measurement is performed by applying an AC Voltage across a primary winding of the transformer while simultaneously measuring the current flowing through the same primary winding (while the secondary and tertiary winding(s) of the transformer are open-circuited). This test is sensitive to detect problems related to the core (as shorted laminations) as well as to the windings, such as turn to turn faults.

Oil Filtration

Transformer oil filtering is an important process that removes unwanted contamination in the oil which reduces the oil's insulation properties, such as solid particles, dissolved gas, dissolved water. The dielectric properties of the oil can be enhanced by filtering, dehydrating, and degassing to promote longer transformer life and more efficient operation.

Winding Resistance

A winding resistance test of a transformer is carried out as a type test, routine test and also as a field test. It is done at site in order to check for abnormalities due to loose connections, broken strands of conductor, high contact resistance in tap changers, high voltage leads and bushings.

Online Partial Discharge Testing

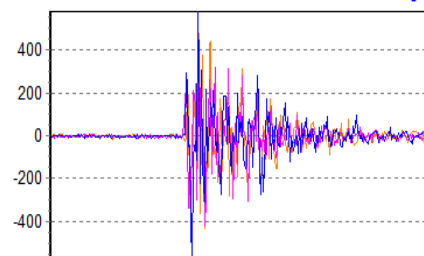
OnlinePDCARE Program is a comprehensive testing and diagnostic procedure used to detect PD of Switchgears, Transformer, Cables, Feeders in energized state. PD screening of medium voltage (3.3 to 45 kV) and high voltage (66 kV+) gives pre-qualification of any dangerous discharges emanating from within the main accessories with the components. The formation of surface tracking and PD related erosion can lead to in-service failures through flashover.

On-Line Switchgear Partial Discharge Testing



We can test any vented metal-clad switchgear in energized condition and detect the presence of partial discharge within. The location of the defect by taking measurement top/bottom & front/back of panel can be identified.

On-Line Cable Partial Discharge (PD) Testing



We can test cables rated from 3.3 kV to 400 kV in energized condition and detect the presence of any PD within the cable/joints/terminations. The location of the defect too is identified.

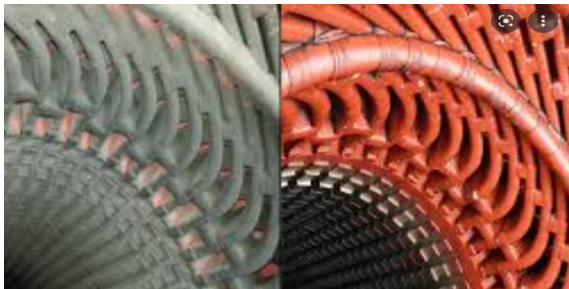
OVERHAULING & CRYOGENIC (CO₂) CLEANING SERVICES

On-site Overhauls

We perform overhauls of large motors, GT and ST generators. Our key points are:

- ▶ Turnkey work from de-coupling to commissioning
- ▶ Dismantling, inspection, cleaning, heating, varnishing and testing
- ▶ All wide range of testing and measurement instruments, and material handling equipment available
- ▶ Specialized equipment available for retaining ring removal, slip-ring replacement, wedge deflection mapping, etc.

Cryogenic Cleaning Services (Dry – ice cleaning)



Synchronous motor – before and after



Hydro generator – before and after

Dry-ice blasting is a form of carbon dioxide cleaning, where dry ice, the solid form of carbon dioxide, is accelerated in a pressurized air stream and directed at a surface to clean it. Because the dry-ice sublimated and transforms directly from solid to gas, the dry ice cleaning process doesn't leave and contamination like dust, liquid or chemical residues, however the dry ice does leave the cleaned surface beautifully clean.

Brand Partners

- Authorized Service Center for Toshiba Mitsubishi Electric (TMEIC) in UAE.
- Authorized Service and Distribution Center for Wabtec (GE Transportation) AC/ DC Motors in MENA region.
- Authorized Service Center for Breuer Motoren in Middle East.
- Authorized Service and Distribution Center for Cummins Generator Technology (Stamford, Newage and AvK) in MENA region.
- Authorized Service and Distribution Center for Marelli Motori in UAE.
- Authorized Service Center for WEG in UAE.
- Approved Service Centre for Caterpillar, NIDEC, KATO, Leroy Somer in UAE.
- Approved Service Centre for Keppel LeTourneau Middle East.

Membership

IDM maintains memberships with the following reputable organizations:

- Association of Electrical & Mechanical Trades
- Electrical Apparatus Service Association
- International Association of Drilling Contractors



Contact Us

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