



**QUALITY TESTING & INSPECTION SERVICES**

# POWER HOUSE

---

⚡ FOUNDED IN 1993; HEADQUARTERED IN THE 6<sup>TH</sup> OF OCTOBER CITY, CAIRO; FREE ZONE NEAR SUEZ.

⚡ **ISO-CERTIFIED.**

⚡ **INTEGRATED SERVICE PROVIDER AND PACKAGER DELIVERING TURNKEY SOLUTIONS:**  
OIL & GAS SERVICES, POWER GENERATION, PUMPING SERVICES, WATER DESALINATION AND ELECTRO-MECHANICAL CONTRACTING.

⚡ FOCUSED ON ACHIEVING **HIGHEST COST SAVINGS, FASTEST LEAD TIME AND TOP QUALITY SOLUTIONS** FOR OUR CLIENTS.

# ELECTRIC GENERATORS PERFORMANCE TESTING: LOAD BANKS



- ⚡ HEAVY-DUTY RESISTIVE LOAD BANKS OF UP TO 30 MW.
- ⚡ FINE STEP LOADS (DOWN TO 1 kW).
- ⚡ CAN OPERATE ON BOTH DC AND AC LOADS (50/60 HZ).
- ⚡ SUITABLE FOR BOTH OF ONSHORE AND OFFSHORE APPLICATIONS.



**LOAD BANKS TESTING 10 MW POWER STATION (GAS GENERATORS) AT 11,000 V (Borg El Arab Station)**

# PUMPS PERFORMANCE TESTING



- ⚡ POSSIBILITY FOR TESTING 4 PUMPS SIMULTANEOUSLY
- ⚡ RELIABLE FLOWRATE AND PRESSURE GAUGES
- ⚡ VSD PANEL CONTROL FOR SOFT STARTING AND FOR PUMP OPERATION AT DIFFERENT SPEEDS
- ⚡ POSSIBILITY FOR CONTINUOUS AND LONG TESTS THANKS TO WATER COOLING THROUGH RADIATOR
- ⚡ TESTING OF PRESSURES UP TO 100 BARS
- ⚡ POSSIBILITY FOR TESTING PUMPS DRIVEN BY MOTORS AT A WIDE RANGE OF POWERS AND FREQUENCIES & AT LOW OR MEDIUM VOLTAGE. POWER SUPPLIES AVAILABLE WITH RATINGS UP TO 6 MW
- ⚡ VIBRATION MONITORING/ANALYSIS; INFRARED TEMPERATURE MONITORING OF BEARINGS; PUMP-MOTOR ALIGNMENT MONITORING USING LASER INSTRUMENTS

# NON-DESTRUCTIVE TESTING

## BORESCOPE-VIDEOSCOPE



- ⚡ RIGID OR FLEXIBLE BORESCOPE LINKED TO A VIDEOGRAPHY DEVICE
- ⚡ VISUAL INSPECTION OF NARROW DIFFICULT-TO-REACH CAVITIES

## DYE PENETRATION TESTS (DPT)



- ⚡ DETECTS ALL SURFACE DISCONTINUITIES BY PENETRATING AND MAGNIFYING DISCONTINUITIES
- ⚡ SIMPLE, SENSITIVE AND PORTABLE
- ⚡ CAN BE USED FOR ALL TYPES OF METALS
- ⚡ DPT IS CARRIED OUT IN ACCORDANCE WITH AWS D1.1, ASME V OR API 1104

## MAGNETIC PARTICLE TESTS (MPT)



- ⚡ MOST UTILIZED METHOD TO DETECT SURFACE AND NEAR-SURFACE DEFECTS.
- ⚡ MPT IS MORE SENSITIVE THAN THE DYE PENETRANT TEST DUE TO ITS ABILITY TO DETECT DEFECTS WHICH ARE NOT VISIBLE FROM THE SURFACE.
- ⚡ DETECTION DOWN TO A DEPTH OF 1/8 INCH.
- ⚡ MPT IS CARRIED OUT IN ACCORDANCE WITH AWS D1.1, ASME V, OR API 1104

## ULTRASOUND TESTS (UT)



- ⚡ IDEAL FOR INSPECTING BUTT WELDS ON STEEL STRUCTURES, TANKS, PIPES OR BOILERS.
- ⚡ SOUNDNESS OF WELD, THICKNESS OF MATERIAL, AND OTHER MECHANICAL PROPERTIES CAN BE INSPECTED BY THIS ULTRASONIC METHOD.
- ⚡ TESTS ARE CARRIED OUT IN ACCORDANCE WITH ASME V, AWS D1.1, AND API 110

## POSITIVE MATERIAL IDENTIFICATION TESTS



- ⚡ METAL-ALLOY IDENTIFICATION USING **NITON XL2 GOLDD** HIGH-SPEED POINT & SHOOT INTEGRATED CAMERA
- ⚡ FOR MINING, EXPLORATION, LEAD-BASED PAINT TESTING, RCRA METALS IN SOIL, TOYS AND CONSUMER GOODS
- ⚡ LIGHT ELEMENT DETECTION (MG, AL, SI, S, P)
- ⚡ COMPLETELY NON-DESTRUCTIVE TESTING WITH OFFICIAL PRINTED CERTIFICATIONS.

# NON-DESTRUCTIVE TESTING (CONTINUED)

## COATING ROUGHNESS MEASUREMENT



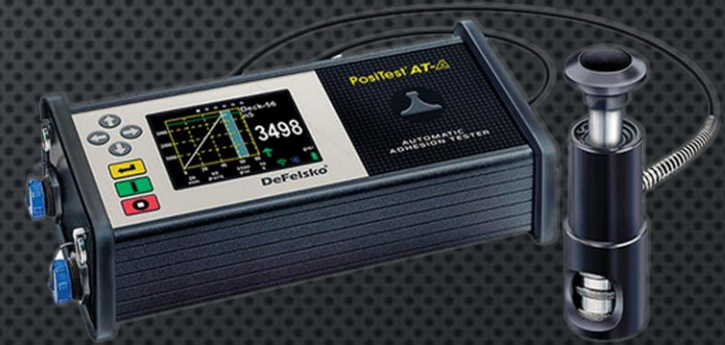
- THE FIRST OF 2 STEPS OF THE COATING PROCESS IS THE PREPARATION OF THE SURFACE BY SAND-BLASTING OR ANY OTHER COMMON METHOD.
- ELCOMETER-224 DIGITAL SURFACE PROFILE GAUGE MEASURES ROUGHNESS OF THE MATERIAL SURFACE TO ENSURE IT MEETS THE REQUIRED GRADE OF ROUGHNESS IN PREPARATION FOR THE SECOND STEP OF THE COATING PROCESS (AS PER MANUFACTURER PROCESS / SPECIFICATIONS).
- EVALUATION OF THIS TEST CAN BE CONDUCTED IN ACCORDANCE WITH ISO 12944.

## COATING THICKNESS MEASUREMENT



- THE SECOND (FINAL) STEP OF THE COATING PROCESS INVOLVES COATING THE SURFACE WITH TWO OR THREE LAYERS OF THE EPOXY PAINTS.
- WET FILM THICKNESS AND DRY FILM THICKNESS ARE MEASURED TO ENSURE THAT THE COATING SYSTEM MEETS THE ACCEPTABLE LIMITS (AS PER SPECIFICATIONS OR CODE).
- DEVICES USED ARE ELCOMETER-3236 OR ELCOMETER-456 TO MEASURE THE THICKNESS OF WET AND DRY FILM AND EVALUATE THE COATING SYSTEM (IN ACCORDANCE WITH ISO 12944 OR ANY OTHER REQUIRED SPECIFICATION).

## COATING ADHESION MEASUREMENT



- ELECTRONICALLY-CONTROLLED HYDRAULIC PUMP AUTOMATICALLY APPLIES SMOOTH AND CONTINUOUS PULL-OFF PRESSURE.
- GREATLY REDUCES USER EFFORT AND THE RISK OF INFLUENCING THE PULLING PROCESS.
- USER ADJUSTABLE PULL RATE, PULL LIMIT AND HOLD TIME.
- IMPACT AND SCRATCH RESISTANT COLOR TOUCHSCREEN WITH KEYPAD FOR OPERATION WITH OR WITHOUT GLOVES

# MECHANICAL TESTING

## PCE-VT 2700



VIBRATION MEASUREMENT & ANALYSIS. MAINTAINING CRITICAL EQUIPMENT BY MONITORING RADIAL AND AXIAL VIBRATION (AS PER INTERNATIONAL STANDARDS)

- ⚡ 9 Hz - 10 kHz FREQUENCY
- ⚡ 1RPM ACCURACY: ± 5% OF READING
- ⚡ ISO CALIBRATION CERTIFICATE INCLUDED

## FLUKE 810



MEASURES STANDARD FAULTS, IMBALANCES, LOOSENESS, MISALIGNMENTS AND BEARING FAILURES

- ⚡ FULL ANALYSIS OF MOTORS, PUMPS AND COMPRESSORS
- ⚡ MACHINE ROTATIONAL SPEED RANGE FROM 200RPM TO 12,000RPM
- ⚡ DETAILED DIAGNOSTIC REPORTS

## BALANCING TEST



INDUSTRY-LEADING ROTOR BALANCING MEASUREMENT

- ⚡ ACCURATE UP TO 1100 KG
- ⚡ MAX. DIAMETER OF 1580MM
- ⚡ MAX. DISTANCE OF 1000MM BETWEEN CARDAN JOINT FLANGE AND CENTERLINE

## DIESEL INJECTORS AND INJECTION PUMPS TESTING



ENSURES YOUR FUEL SYSTEM IS WORKING ECONOMICALLY AND AT OPTIMAL LEVELS

- ⚡ IMPROVES DIESEL ENGINE RELIABILITY
- ⚡ DECREASES DOWNTIME AND LOWERS MAINTENANCE COSTS

## FUEL INJECTORS TESTING



EVALUATES MISFIRING OR ROUGH OPERATION DUE TO CLOGGED INJECTORS

- ⚡ STARTUP PROBLEMS (KNOCKING, IDLING ISSUES, ETC.)
- ⚡ INCREASE OPERATING LIFE OF EQUIPMENT
- ⚡ IMPROVE FUEL CONSUMPTION
- ⚡ IMPROVE EMISSIONS

## LUBRICANT OIL ANALYSIS SERVICE



DETECT/PREDICT POTENTIAL ENGINE OR GEARBOX FAILURES WITH FULL ANALYSIS

- ⚡ HYDRAULIC, POWER STEERING & TRANSMISSION LUBRICANTS
- ⚡ FOR MOTORS, PUMPS AND COMPRESSORS
- ⚡ IMMEDIATE RESULTS (E-MAIL, INSTANT ALERTS)

# ELECTRICAL TESTING

## EARTH RESISTANCE MEASUREMENT



### EARTH GROUND TESTING

- ⚡ ONE-POLE AND FOUR-POLE FALL-OF-POTENTIAL (USING STAKES)
- ⚡ TWO-POLE SOIL RESISTIVITY TESTING (USING STAKES)
- ⚡ SELECTIVE TESTING (USING 1 CLAMP AND STAKE)

## THERMAL IMAGER



### THERMAL IMAGING HELPS DETECT AND PREDICT EQUIPMENT FAILURES

- ⚡ ELECTRICAL PANELS
- ⚡ POWER CABLES
- ⚡ ROTATING EQUIPMENT
- ⚡ HEAT EXCHANGERS

## WINDING INSULATION MEASUREMENT (LOW/HIGH VOLTAGE)



### DROPS IN INSULATION RESISTANCE DUE TO FLOODING OR AGING. PERIODIC INSPECTION PREVENTS SERVICE FAILURES, POTENTIAL INJURIES AND ALLOWS FOR PREVENTIVE MAINTENANCE.

- ⚡ MOTORS, CABLES, ALTERNATORS, AND OTHER ELECTRICAL EQUIPMENT
- ⚡ PREVENTIVE MAINTENANCE INCLUDES REWINDING OR INSULATION IMPROVEMENT
- ⚡ PROVIDING RECOMMENDED PREVENTIVE MAINTENANCE TIME PLANS

## POWER ANALYSIS



### POWER ANALYSIS SERVICE FOR SINGLE-PHASE OR BALANCED THREE-PHASE

- ⚡ MEASURE AND QUALIFY YOUR ELECTRICAL NETWORK HARMONICS
- ⚡ IMMEDIATE "IN-RUSH" MODE FOR STARTER CURRENTS
- ⚡ RECORDS UP TO 1 WEEK OF COMPREHENSIVE REPORTING DATA



# ELECTRICAL TESTING (CONTINUED)

## CURRENT INJECTOR



- ⚡ CURRENT INJECTION TESTING SETS AID IN DETECTING FAULTY OR INCORRECTLY ADJUSTED PROTECTION CIRCUITS / DEVICES AND THEREBY AVOID DAMAGE TO THE SYSTEM.
- ⚡ WITH THE HELP OF CURRENT INJECTION TEST SETS THE CORRECT FUNCTIONING OF PROTECTIVE CIRCUITS / DEVICES IS ENSURED.
- ⚡ PRIMARY CURRENT TESTING IS CONDUCTED BY INJECTING A PROGRAMMED SEQUENCE OF OVERLOAD AND FAULT MAGNITUDE CURRENTS THROUGH A CIRCUIT BREAKER AND DOCUMENTING HOW LONG IT TAKES THE TRIP UNIT TO ACTIVATE

## COIL TESTER



COIL TESTER INSTANTLY VERIFIES ACTIVE OR INACTIVE COIL OPERATION.

DETECTS THE MAGNETIC FIELD CREATED BY A COIL. TOOL CAN BE USED TO TEST:

- ⚡ COIL ON PLUG
- ⚡ COIL NEAR PLUG
- ⚡ COIL PACK SYSTEMS

# ENVIRONMENTAL TESTS & MEASUREMENTS

## NOISE MEASUREMENT



EVALUATION OF AMBIENT AND EQUIPMENT NOISE LEVELS

- ⚡ PREVENT HEARING-LOSS OR RELATED HEALTH RISKS OF EMPLOYEES
- ⚡ AVOID WORK ABSENCES, EMPLOYEE COMPENSATIONS OR UNHEALTHY WORKING ENVIRONMENT
- ⚡ SOUND TESTING ENSURES SOUND LEVELS ARE WITHIN INTERNATIONAL ACCEPTED RANGES

## LIGHT INTENSITY MEASUREMENT



MEASURES HOW MUCH LIGHT SOURCES ILLUMINATE OBJECTS OR WORK-SPACES

- ⚡ IDENTIFY MOST SUITABLE LIGHTING CONDITIONS
- ⚡ PROVIDE STANDARD TECHNICAL LIGHTING REFERENCES IN ACCORDANCE WITH INTERNATIONAL STANDARDS

## HAZARDOUS GASES DETECTION & MONITORING



MEASURES GAS EMISSIONS RESULTING FROM DAILY OPERATIONS WHICH CAN HAVE NEGATIVE HEALTH IMPACTS ON EMPLOYEES

- ⚡ REGULAR MONITORING AND CONTROL OF GASES REQUIRED BY NATIONAL LABOR LAWS
- ⚡ IDENTIFY CO<sub>2</sub>, CO, NO, NO<sub>2</sub>, CH<sub>4</sub>, H<sub>2</sub>S, AND O<sub>2</sub> EMISSIONS

# ENVIRONMENTAL TESTS & MEASUREMENTS (CONTINUED)

## FLUE GAS ANALYZER



- ⚡ ENGINES, FURNACES, HEATERS, AND BOILERS BURN FUEL IN THE PRESENCE OF OXYGEN TO PRODUCE HEAT. ACHIEVING AN INTELLIGENT BALANCE OF FUEL AND AIR WILL PROVIDE THE MOST EFFICIENT COMBUSTION AND HIGHEST COST SAVINGS.
- ⚡ MEASURING THE EXHAUST GAS IS AN EXCELLENT MEANS TO OPTIMIZE FUEL AND AIR INPUT.
- ⚡ MEASURE THE CONCENTRATION OF VARIOUS GASES IN THE EXHAUST IN ORDER TO MONITOR AND HELP ACHIEVING OPTIMAL COMBUSTION.
- ⚡ EFFICIENT COMBUSTION ALSO REDUCES EMISSION OF POLLUTANTS SUCH AS NITRIC OXIDE (NO), NITROGEN DIOXIDE (NO<sub>2</sub>), SULFUR DIOXIDE (SO<sub>2</sub>), AND PARTICULATE MATTER.

# EGYPT'S MOST REPUTABLE COMPANIES RELY ON US...



# THANK YOU!

Our offices are located at:  
Area 75 – 6th Industrial Zone  
6th of October City, Giza 12581, Egypt

Please contact us at:  
[Sales@powerhouseegypt.com](mailto:Sales@powerhouseegypt.com)

Or call us on:  
(+20) 12 2398 0045

