Testing Facilities

AL-AHLEIA SWITCHGEAR CO.
Kuwait
Quality Assurance Department
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INTRODUCTION

Al-Ahleia Switchgear Company is equipped with a wide range of sophisticated test facilities operated by highly skilled workers to ensure full compliance to Customer requirements and IEC/BS Standards.

Al-Ahleia Switchgear Company has the unique distinction of being the first Kuwaiti Company to be awarded the prestigious ISO 9001:2000 and ISO/TS 29001:2007 certification in recognition for the high quality of products and Customer services as well as an excellent quality management system.

Fully equipped with test facilities to conduct all Routine & Type tests as per IEC/BS Standards for Switchgear up to 36 KV & Distribution / Power Transformers up to 132KV. In addition, to this we have facilities for testing CT’s, PT’s, Numerical relays, Measurement Centre, Differential Protection Relays, High Frequency Inter trip relays, Distance Protection relays, Electro-Mechanical relays, Different type of Transducers, Meters etc.

We also invite Internationally recognized laboratories like CESI / KEMA / ASTA to Al-Ahleia Switchgear Company Test Lab for witnessing Type tests as per the latest IEC / BS Standards.

“CESI” WITNESSED TEST FOR 30MVA - 132/11.5KV OIL FILLED TRANSFORMER

- Impulse Test for 30MVA, 132 / 11.5KV
- Separate Source Power Frequency Test for 30MVA, 132 / 11.5KV
- Partial Discharge Test for 30MVA, 132 / 11.5KV
- Sound Level Test for 30MVA, 132 / 11.5KV
- Temperature Rise Test for 30MVA, 132 / 11.5KV
- Hydraulic Pressure Test for 30MVA, 132 / 11.5KV
“CESI” WITNESSED TEST FOR 36KV,40KA GAS INSULATED SWITCHGEAR

- Gas Pressure withstand Test
  36KV,40KA,SF6 GIS

- Dielectric Test for
  36KV,40KA,SF6 GIS

- Gas Tightness Test
  36KV,40KA,SF6 GIS

- Temperature Rise Test for
  36KV,40KA,SF6 GIS

- Mechanical Endurance Test for
  36KV,40KA,SF6 GIS

- Mechanical Operation Test for
  36KV,40KA,SF6 GIS

“CESI” WITNESSED TEST FOR 1000 KVA UDS OIL FILLED TRANSFORMER

- Impulse Test for UDS
  1000KVA, 11 / 0.433KV

- Temperature Rise Test for UDS
  1000KVA, 11 / 0.433KV

- Temperature Rise Test for 1000KVA
  UDS Transformer with Housing.

- Partial Discharge Test for 1000KVA
  CRT Transformer with Housing

- Degree of Protection IP Test
  Against ingress of solid objects

- Degree of Protection IP Test
  Against ingress of water

- Degree of Protection IP Test
  Against ingress of Dust Protection
“CESI” WITNESSED TEST FOR 15KV SF6 GAS INSULATED RING MAIN UNIT

Temperature Rise Test for 15KV SF6 Gas Insulated Ring Main Unit

Impulse Test for 15KV SF6 Gas Insulated Ring Main Unit

“CESI” WITNESSED TEST FOR 7.2KV AIR INSULATED VACUUM SWITCHGEAR

Mechanical Operation Test for 15KV SF6 Gas Insulated Ring Main Unit

Gas Tightness Test for 15KV SF6 Gas Insulated Ring Main Unit

“CESI” WITNESSED TEST FOR 15KV SF6 GAS INSULATED RING MAIN UNIT

Impulse Test for 7.2KV Air Insulated Vacuum Switchgear

“CESI” WITNESSED TEST FOR 15KV AIR INSULATED VACUUM SWITCHGEAR

Temperature Rise Test for 15KV Air Insulated Vacuum Switchgear

Mechanical Operation Test for 15KV Air Insulated Vacuum Switchgear

“CESI” WITNESSED TEST FOR 15KV SF6 GAS INSULATED RING MAIN UNIT

“CESI” WITNESSED TEST FOR 15KV AIR INSULATED VACUUM SWITCHGEAR

Temperature Rise Test for 7.2KV Air Insulated Vacuum Switchgear

Mechanical Operation Test for 7.2KV Air Insulated Vacuum Switchgear
“CESI” WITNESSED TEST FOR UDS LOW VOLTAGE DISTRIBUTION BOARD

Temperature Rise Test for UDS Low Voltage Distribution Board

“CESI” WITNESSED TEST FOR OPEN TYPE LOW VOLTAGE DISTRIBUTION BOARD

Temperature Rise Test for Open Type Low Voltage Distribution Board

LIST OF TEST EQUIPMENT

1) HIGH VOLTAGE TEST EQUIPMENT
- AC High voltage Test Set 0-5KV AC
- AC High Voltage Test Set 0-35KV AC
- AC & DC High voltage Test Set 0-55KV AC / DC
- AC High voltage Test Set, 0-60 KV AC
- AC High voltage Test Set, 0-100 KV AC
- AC High Voltage Test Set, 0-130 KV AC
- AC High Voltage Series Resonant Test System 0-500 KV AC.
- Digital DC High voltage Test set 0-120 KV DC
- DC High voltage test set 0-350 KV DC
- AC/DC Kilovolt Meter 0-100KV for measurement.
- AC Kilovolt Meter- 400KV for measurement.
- 10KV& 5KV,Digital Insulation Tester
- Automatic Transformer Test System for testing the Power / Distribution Transformers.
- Automatic Voltage Transformer Test System (Up to 36KV PT’S)
- Impulse Voltage Test System, 1000 KVP,50KJ
- Impulse Voltage Test System, 400KVP,20KJ
- Surge platform for Lightning impulse up to 7.4KV with wave shape 1.2/50Micro Seconds for Low Voltage switchgear.
- Partial Discharge Detector & Calibrator . Sensitivity 0.01pC. (For testing Transformers)
- Partial Discharge & High Voltage Test Equipments with Calibrator .Sensitivity- 0.01pc.

2) HIGH CURRENT TEST EQUIPMENT
- 3 Phase AC Primary Injection Test Set, 0-7000 A for Temperature rise test.
- 1 Phase AC Primary injection test set 0- 500A .
- 1 Phase AC Primary injection test set 0-300A,0-8VAC & 0-600A,0-4VAC
- 1 Phase AC primary injection test set 0-3000A .
- Current Transformer Analyzer for CT testing as per IEC 60044-2.
- Hybrid Temperature Recorder/Logger (Up to 24 channel recording) Accuracy +/- 0.1° C
- 12 Channel Temperature Indicator, Sensitivity  1 deg. C.
- Raynger -MX Temperature Indicator – For remote thermal sensor.
- Thermocouples (Chromium CH+ and Aluminium Al-)
- 3 Phase AC current Transformer up to 3000A.
- Digital Micro Ohm Meter 0-600 A DC for contact resistance measurement.
3) SF6 GAS TEST EQUIPMENT
- SF6 Gas Leak Checker - Sensitivity 1 x 10^{-7} ml/sec, 1 ppm.
- SF6 Gas Leak Detector - Indicating device, Max. Sensitivity 7 gms of SF6 / Year
- SF6 Gas Handling / Recovery Unit.
- SF6 - Volume Percentage Measuring Device.

4) OIL TEST EQUIPMENT
- Automatic Oil Test Set for testing Break down voltage (BDV) of Oil.
- Portable Oil Test Set for checking moisture content in ppm in transformer oil.
  (0-100 PPM) Accuracy +/- 1%
- Automatic Oil Tan Delta and Resistivity Test Set for testing the Oil. Accuracy +/- 0.1%
- Automatic Capacitance and Tan Delta Test Set for testing the Transformer.
  Accuracy +/- 0.2%
- Transformer oil Dissolved Gas Analysis test set for testing the transformer Oil.

5) RELAY TEST EQUIPMENT (Electro mechanical / Numerical / microprocessor relays)
- 1 Phase AC Primary Current Injection Set, 0-50A
- 1 Phase Automatic Computerized Multifunction Secondary injection test set
- 3 Phase AC Automatic Computerized Relay Test System with phase angle shift.
- 1 Phase Relay Test Kit, 0-250VAC, 0.75A & 0-300VDC, 0.5A
- 3 Phase Universal Relay Test System with phase angle shift.

6) MECHANICAL TEST EQUIPMENTS
- Plating / Painting thickness measuring equipment.
- Digital Vernier Caliper up to 2.0 meter.
- Offset Digital Vernier Caliper
- Digital Micrometer
- Universal Bevel Protractor
- Depth Gauge, Thread gauges, Radius gauges, Bore gauges & Torque Wrench
- Portable Hardness Tester
- Digital shore hardness tester - To check the hardness of rubber & Plastic items.
- Surface Roughness meter - To check the measure of Surface roughness - Range 19.99µm
- Non Destructive Testing equipment - To check the surface defects of welds.
- Weld gauge/Bridge cam gauge - To check the defects of welding before and after welding process.
- Cross hatch cutter - To check the adhesion of paint coatings.
- Vertical Height Gauge - Measures in mm or inch. Accuracy: 0.001mm/0.0001"
- Gauge Block Applied Instrument – To check the calibration of Vernier Caliper
- Salt Spraying Testing for corrosion resistance test.
- Degree of Protection IP Test
- Portable Circuit Breaker Analyzer
- Magnetic particle field indicator
- Digital Hardness Tester - Check the hardness in HRA, HRB & HRC Scales
- Barometer
- Thermo Hygrometer

7) TEST EQUIPMENT (GENERAL - TRANSFORMER & SWITCHGEAR)
- Sound Level Meter for carrying out measurement of sound in Transformer & Switchgears. Range: 30 – 130 dB.
- Three Phase Transformer Turns Ratio meter for checking the voltage ratio & vector group of Transformers. Accuracy: ±0.3%
- Transformer Micro Ohm Meter for checking winding resistance measurement of Transformers. Accuracy: ±0.1%
- Digital Power Meter for measuring 3 phase Voltage, Current, Power, Frequency & Harmonics. Accuracy: ±0.2%
- Direct Reading Iron Loss Tester for checking the transformer core sheet losses. It measures w/kg. Accuracy: ±5%
- Frequency Response Analyzer for detection of Mechanical distortions of transformer windings.
- Transformer Polarity Tester
- Digital Multimeter
- CT Saturation/Polarity Test Kit (Digital)
- Low Resistance Milli Ohm Meter (10 Milli ohm to 1K Ohm)
- Digital Earth Leakage Clamp Meter.
- Phase Sequence Meter
- High Resistance Decade Box.
HIGH VOLTAGE TEST EQUIPMENT

AUTOMATIC TRANSFORMER TEST SYSTEM

IMPULSE VOLTAGE TEST SYSTEM, UP TO 1000KVp, 50KJ

REGULATOR UNIT, 1000KVA

IMPULSE TEST SYSTEM, UP TO 1000KVp, 50KJ
AC HIGH VOLTAGE SERIES RESONANT TEST SYSTEM, UP TO 500 KV AC

AC DIELECTRIC TEST SET, UP TO 5 KV AC

PARTIAL DISCHARGE AND HIGH VOLTAGE TEST EQUIPMENT WITH CALIBRATOR

5KV, DIGITAL INSULATION TESTER

DC HIGH VOLTAGE TEST SET (UP TO 350KV DC)
AC HIGH VOLTAGE TEST SET, UP TO 130KV AC

HIGH CURRENT TEST EQUIPMENT

3 PHASE AC PRIMARY INJECTION TEST SET (UP TO 7000A) FOR TEMPERATURE RISE TEST

AC HIGH VOLTAGE TEST SET, UP TO 60KV AC

CURRENT TRANSFORMER ANALYZER

AUTOMATIC VOLTAGE TRANSFORMER TEST SYSTEM

1 PHASE AC PRIMARY INJECTION TEST SET UP TO 3000A
1 PHASE AC PRIMARY INJECTION TEST SET UP TO 3000A

12 CHANNEL TEMPERATURE INDICATOR

DIGITAL MICRO OHM METER UP TO 600A DC

SF6 GAS LEAK CHECKER

SF6 GAS LEAK DETECTOR

SF6 GAS TEST EQUIPMENT
OIL TEST EQUIPMENT

- AUTOMATIC OIL TEST SET
- TRANSFORMER OIL DISSOLVED GAS ANALYSIS TEST SET
- PORTABLE OIL TEST SET
- 1 PHASE AC PRIMARY CURRENT INJECTION SET, UP TO 50A
- AUTOMATIC CAPACITANCE AND TAN DELTA TEST SET
- 3 PHASE AC AUTOMATIC COMPUTERISED RELAY TEST SYSTEM

RELAY TEST EQUIPMENT
MECHANICAL TEST EQUIPMENT

1 PHASE AUTOMATIC COMPUTERISED SECONDARY INJECTION TEST SET

PLATING/PAINTING THICKNESS MEASURING EQUIPMENT

VERTICAL HEIGHT GAUGE

GAUGE BLOCK APPLIED INSTRUMENT

SALT SPRAY TESTING

MAGNETIC PARTICLE FIELD INDICATOR

DEGREE OF PROTECTION IP TEST - AGAINST INGRESS OF SOLID FOREIGN OBJECTS & INGRESS OF WATER)
SURFACE ROUGHNESS METER

DIGITAL HARDNESS TESTER

PORTABLE HARDNESS TESTER

PORTABLE CIRCUIT BREAKER ANALYZER

DIGITAL MICROMETER

RADIUS GAUGES

THERMO HYGROMETER

UNIVERSAL BEVEL PROTRACTOR

BARO METER

DEPTH GAUGE

THREAD GAUGES
TEST EQUIPMENT
(GENERAL - TRANSFORMER & SWITCHGEAR)

PORTABLE CIRCUIT BREAKER ANALYZER GRAPH

DIRECT READING IRON LOSS TESTER

FREQUENCY RESPONSE ANALYZER

THREE PHASE TRANSFORMERURNS RATIO METER

TRANSFORMER MICRO-OHM METER

DIGITAL POWER METER

SOUND LEVEL METER
Our Mission is Customer Satisfaction