

High Voltage Test & Condition Monitoring Services

EXPERTISE

Expert technical ability and knowledge with over 20 years experience in high voltage test and condition assessments.

COMPETENCE

Specialized training in discipline specific fields from equipment manufacturers and international subject matter experts.

INTEGRITY

Professional and honest business relationships with customers.

REAL SOLUTIONS

Comprehensive and independent analysis and reports, provide customers with real solutions to asset management and maintenance regimes.

OUR SPECIALISED TEST EQUIPMENT INCLUDES:

World renowned Doble, HV Diagnostics, Megger and All-Test Pro equipment.



apt Risk Management provides customers in Australia and New Zealand with the following expertise in high voltage condition monitoring, testing and commissioning services.

Maintenance testing regimes are in accordance to:

ANSI/NETA MTS-2007: Standard for Maintenance Testing Specifications.

Switchboard Inspection

- Physical and Thermographic Scanning

Overhead Power Line

- Thermographic Scanning

Circuit Breakers

- Insulation Resistance
- Over-Voltage Pressure Testing
- Contact Resistance

Busbars

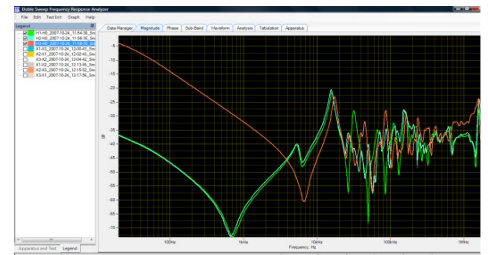
- Insulation Resistance
- Over-Voltage Pressure Testing
- Continuity

Current and Voltage Transformer

- Insulation Resistance
- Over-Voltage Pressure Testing

Transformer Testing

- SFRA (Sweep Frequency Response Analysis)
- Dielectric Dissipation Factor ($\tan\delta$)
- Excitation Current
- Winding Resistance
- Turns-Ratio
- Oil Analysis
- Visual Checks



Motor Testing

- Insulation Resistance
- Polarization Index
- Winding Resistance
- Dielectric Dissipation Factor ($\tan\delta$)
- Partial Discharge
- Motor Circuit Analysis(MCA)

In addition to off-line testing, there are two major on-line tools in motor testing –

- Electrical Signature Analysis (ESA)
- Thermography Scanning



High Voltage Test & Condition Monitoring Services

LATEST TECHNOLOGIES

Constant market research ensures implementation of latest technologies, methodologies and best practices.

CONSISTENCY & REPEATABILITY

The test equipment employed is proven throughout industry worldwide as the most reliable for repeatability.

Our employees are qualified, trained, assessed and authorized in accordance to our Written Practices.

COMPLIANCE

Test procedures are in compliance to all the latest, relevant national and international standards, statutory and regulatory requirements.

OUR SPECIALISED TEST EQUIPMENT INCLUDES:

World renowned HV Diagnostics equipment.

Power Cable Testing & Diagnostics

Power cables are the major arteries for electrical power.

On items of plant such as transformers and switchgear, regular maintenance and condition monitoring is performed. Yet on power cables, being so important, why then is no regular maintenance or diagnostics done by plant owners? Cables are buried in the ground, hung down a mine shaft and left there to fend for themselves.

In addition, cable diagnostics should form part of any cable replacement program. A major part of the replacement decision making process is based on individual cable performance, which in turn, is based on cable condition.



Whilst still an acceptable test for PILC cables, DC testing *WILL* damage solid dielectric insulation.

IEEE 400-2001: Guide for Field Testing and Evaluation of the Insulation of Shielded Power Cable Systems.

“By far the most successful cable testing is the 0.1Hz Sinusoidal PD & TD test sets for Field Testing”

Cable Diagnostic tests offered by apt Risk

Management include:

1. 0.1Hz Sine Wave Over-Voltage Pressure test

Category 1 Test

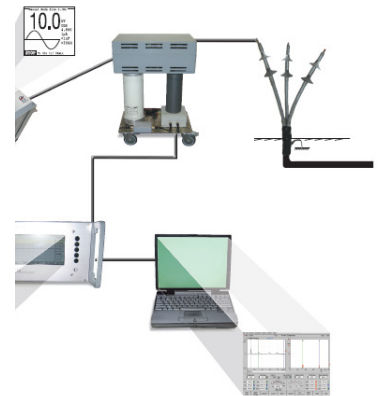
This test is used to “fault” the cable defects without jeopardizing the cable system integrity. It does not cause harmful space charges (as is the case with DC) and is best effective with PILC cable, but can also be used with XLPE cable.

2. General Condition Assessment (Tan-δ)

Category 2 Test

This test is non-destructive.

It is possible through the application of a 0.1Hz Sine Wave test voltage, providing an overall assessment of the dielectric insulation.



3. Off-Line Partial Discharge and Location

Category 2 Test

This test is non-destructive.

Off-line PD has been proven to detect between 85% and 95% of defects through statistically significant data correlation studies and is backed by the IEEE400 as the most effective test.

Whereas, on-line PD monitoring will detect only 3% or less of insulation defects,

