

Test  
Report  
Monitor

**NEWPOWER**  
DIAGNOSTICS 

# CAPTURING PARTIAL DISCHARGE



# ONLINE SCANNING OF HIGH VOLTAGE EQUIPMENT

## Introducing NPD

New Power Diagnostics (NPD) are the leaders in High Voltage (HV) electrical insulation testing in Australia.

Experienced and well respected across the mining, construction and government sectors; NPD's priority is to ensure our clients can make informed decisions that safeguards their supply of power.

We achieve this with the provision of dedicated personnel and by utilising the latest in technology innovation.

## Online scanning

Condition monitoring of ageing assets has become a growing priority for engineers and an important business priority for any asset management policy.

Thankfully, accurate, cost-effective and non-invasive surveillance solutions are available.

The tools utilised by NPD can provide early recognition of electrical equipment that is degraded or has an impending failure allowing for reliable partial discharge detection - one of the most crucial steps in assessing high voltage electrical insulation condition.

Recent studies in the UK have attributed partial discharge to 85% of all disruptive failures in HV plant. Today, organised outages and repairs are saving our clients hundreds of thousands of dollars that would have been incurred due to severe penalties and significant costs to replace the failed equipment and/or equipment within the vicinity. Furthermore, failure due to partial discharge can often be catastrophic which is a fundamental safety concern for employees and the public.

## Key benefits

Online scanning is an important part of any asset management strategy, particularly in today's competitive landscape where outages are not only expensive, they can be debilitating to your business. Herein lies some of the key benefits of online scanning:

- Allows for an assessment of the condition of vital equipment without unwanted outages or load shifts
- Reduces time to record readings compared to that of offline testing
- Complements other testing methods to confirm any concerns e.g. P.D analysis with DGA results
- Substantial cost savings by reducing unplanned outages and expensive repairs to damaged equipment
- Supports reliability and safety of the network.

## Methods

There are many methods of scanning HV plant to assess conditions and give early warning of impending failures. Some of the detection methods include: acoustic, gas analysis, thermography, light or photography methods, pressure and Radio Frequency Interference (RFI).

“ Partial discharge detection is one of the most crucial steps in assessing high voltage electrical insulation condition. ”



## Why work with NPD?

- NPD uses a wide range of the latest technology supplied by Doble, Omicron and EA Technology
- NPD has the expertise to use the equipment effectively and efficiently. We not only identify the problem, we locate it, whether it be real partial discharge or background
- NPD has years of experience with different equipment and insulation types which allows us to identify concerning traits in specific equipment
- NPD has the ability to conduct offline testing using the latest technology, including Omicron MPD600 and Megger DLA
- NPD's knowledge of partial discharge and background types allows us to effectively identify frequency range and insulation types and therefore select the correct test equipment to ensure the problem area can be localised
- NPD's experience in the field means we are across contributing factors to problem areas such as temperature, load, humidity etc.
- NPD's extensive reporting system incorporates GPS locations, photos, recordings and explanations to give our clients an all-encompassing view of the issues at hand
- NPD has an industry recognised quality and safety management system coupled with industry training
- At NPD, we go above and beyond to exceed our client's expectations; always priding ourselves on safety and professionalism.

## Equipment NPD use:

- Doble DFA 300. Far superior to the DFA100, the DFA 300 has an increased frequency range making it not only usable for acoustic detection it can be used for gas insulated switchgear, transformers, vacuum breakers, oil breakers and various other types of HV apparatus
- TEV locator, which can be used to localise partial discharge
- Omicron MPD600 for offline partial discharge detection, with the ability to carry out two and three phase testing
- Doble DFA 300, an enhanced version of the PDS100 RFI scanner, with the following accessories:
  - TEV probe
  - Transformer tank UHF probe
  - Directional antennae for pinpointing P.D
  - HFCT for cable P.D detection.

“ Reduce costs, increase efficiencies and protect your assets. ”

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