Case Study

Cable Instruments

ENW share their experience and results from testing 191 33kV cables with the CableData Collector™

Client - Electricity North West

Electricity North West is a distribution network operator that owns, operates and maintains the North West's electricity network, connecting 2.4 million properties and more than 5 million people to the National Grid.

CableData Collector™

Challenge

- ENWL carried out a two year evaluation of EA Technology's CableData Collector™ (CDC) and CableData Analysis™ Software (CDAS). This evaluation involved the online condition assessment of 191 33kV medium voltage (MV) cables on their network.
- ENWL did their own analysis using the CDAS software.
- As this was an evaluation trial, ENWL chose not to perform any remedial action on the cables tested, but instead to wait and see what happened to the cable's performance.

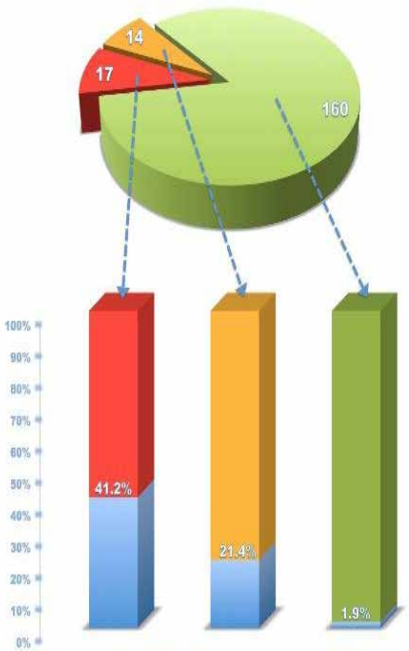
Solution

The chart below shows the results of the testing that was conducted over the first 18 months of the two year evaluation period.

The results are broken down into three categories:

- Green - a test where no Partial Discharge (PD) was found. Cable does not need to be tested for another two years.
- Amber - some levels of PD were detected. Cable should be retested in 6 months' time to see if the levels have increased.
- Red - PD levels indicate significant degradation. The cable should be taken out of service for repair or replacement.

Over the same two year period a number of the cables failed as predicted with the CDC. The chart above shows how many of the cables have faulted since testing in each of the three green, amber, and red categories and is clearly demonstrating the ability of the CDC to assess the condition of the cables in relation to their likelihood of failure.



% of cable faults in each category within 2 years

Benefits

- ENWL now intend to incorporate CDC testing into their outage planning procedure. Any long-term 33kV planned outages will include a pre-outage check on the adjacent circuits which will be carrying all the load during the outage.

MKT0088/CS/V1/201015

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