

The scope

On-line condition assessment is the ultimate solution for MV and HV electrical systems.

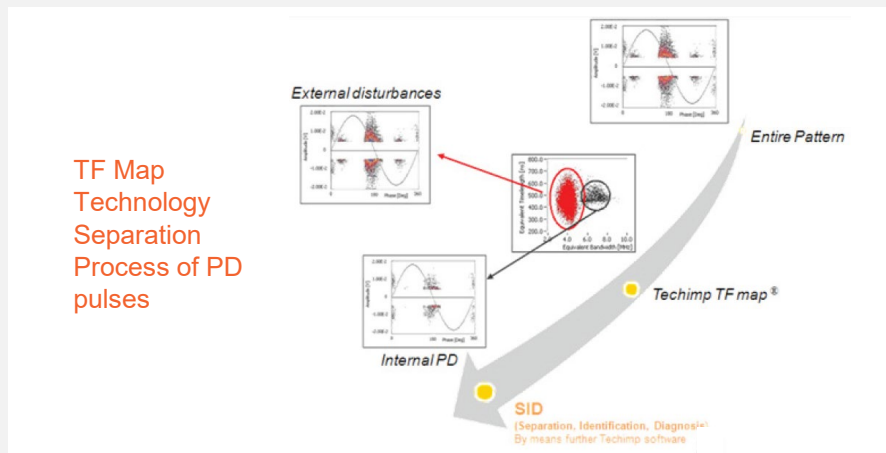
On-line condition assessment technologies with large bandwidth and memory, is capable of acquiring the entire pulse shape of a large number of partial discharge signals, allowing deep partial discharge (PD) analysis to be performed. The acquisition units are provided with ultra wide bandwidth acquisition systems, which collects not only PD pulse peak and phase (as it is done by the digital instrumentation commonly available), but also the PD pulse waveforms.

Key challenges

The key challenge for any analytical processes are:

- Separation of PD signals from noise signals
- Identification of the type of PD signals
- Diagnosis of the risk of the defects.

In fact, an efficient separation of different discharge activities, including noise rejection, can be achieved through pulse shape analysis. Advanced technology avoids identification to be affected by different phenomena overlapping, as well as noise superposition on real PD phenomena.



Martec reliability solution

Martec is a service provider to the market. The data acquisition process is performed by a trained specialist to acquire data with various technologies to add value to the on-line condition assessment process. The data will be compiled and forward to a PD specialist to conduct analysis. The analysis process will be according to international best practices standards.

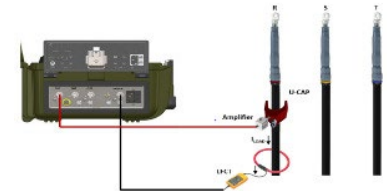
A final engineering technical report for the client with the following information:

- Defect findings on the scope of work.
- Findings with the support technologies used during the data acquisition process.
- Photographs of the visual findings identified.
- Recommended actions
- Previous findings per component for trending analysis.

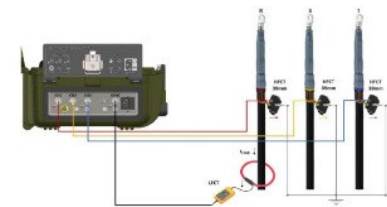
*The final report may be discussed with the client if required.

Tools and technology

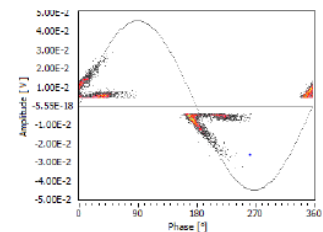
Special U-Cap sensors can be used on the outer insulation of the cable during the data acquisition process.



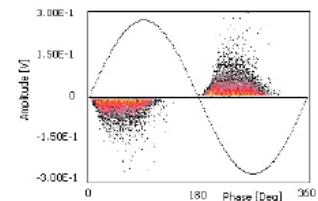
HFCT sensors should be used if the termination earth straps are available. The HFCT sensors are more sensitive and permits assessments of long run cables.



Internal Partial Discharge: Rabbit ear like or round shape with its uniqueness, Usually showing before zero crossing, Quite symmetrical shape under positive and negative voltage.



Surface Partial Discharges: Hair like shape with high repetitive rate and usually depicted along the trigger threshold.



Corona Partial Discharges: High concentration, depicted above the trigger level and are usually strong when the voltage is applied.

