

## Suggestion of new factors for the PE-based MV cable diagnosis using VLF tan-delta

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Recently, tan-delta measurement with 0.1 Hz VLF (Very Low Frequency) source has emerged as a powerful method for diagnosis of MV cables. In this paper, two criteria factors named DTD-a and STSKT (Standard Skirt) are suggested with statistical evidences for more accurate analysis of ageing states on PE-based cables. DTD-a signifies the voltage stability of cables, which is a modified formula of DTD (delta tan-delta) on IEEE 400.2 and STSKT is a new factor by calculating the slope of the measured data to make a judgment of whether the measured data is valid and whether the state of cable is critical or not. The two factors are induced from basic formula of tan-delta and demonstrated by using 14,000 data points.

*Index Terms*-- DTD, cable, STDEV, STSKT, VLF, tan-delta.