

## عنوان مقاله:

Detecting of unnormal conditions of polluted insulators based on analysis phase angle of leakage current

## محل انتشار:

بیستمین کنفرانس توزیع برق (سال: 1394)

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## خلاصه مقاله:

Environmental condition such as pollution and humidity can influence on expected performance of insulators and change their electrical behavior. Pollution also reduces the efficiency of the insulators and increases the possibility of flashover occurrence which consequently results in transmission line outage. Hence, forecasting the flashover and detecting the critical conditions are very important. This paper proposes a new method for critical condition detection and consequently preventing from flashover in porcelain and glass insulators by employing leakage current analysis. The phase index (p.i%) which is defined here is the Cosine of the phase angle the main harmonics of the leakage current. consequently, phase indexes (p.i%) lower than 30%, the insulators are placed in desired and high efficient region and no flashover occurred during the conditions. But pollution with humidity increases this index significantly, therefore, it can be concluded that for indexes higher than 30%, insulator and its electrical behavior will be influenced by condition. Also this index enables operators to have a better planning for optimal utilization of high voltage equipment. Experimental results have verified the validation of the defined index.

## کلمات کلیدی:

insulators, leakage current, flashover, main harmonic phase Angle, indicator(p.i%), pollution insulato

## لینک ثابت مقاله در پایگاه سیویلیکا:

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