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Characterization of Thermal Images Due to Aging of H.V Glass Insulators Using Thermographic Scanning

Authors : Nasir A. Al-Geelani, Zulkurnain Abdul-Malek, M. Afendi M. Piah

Abstract : This research paper investigation is carried out in the laboratory on single units of transmission line glass insulator characterized by different thermal images, which aimed to find out the age of the insulators. The tests were carried out on virgin and aged insulators using the thermography scan. Various samples having different periods of aging 20, 15, and 5 years from a 132 kV transmission line which have exhibited a different degree of corrosion. The second group of insulator samples was relatively mild aged insulators, while the third group was lightly aged; finally, the fourth group was the brand new insulators. The results revealed a strong correlation between the aging and the thermal images captured by the infrared camera. This technique can be used to monitor the aging of high voltage insulators as a precaution to avoid disaster.

Keywords : glass insulator, infrared camera, corona diacharge, transmission lines, thermograpy, surface discharge
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