Estimation of Electrical Performance of a Polymer Insulator with Deposited Moss on the Surface under Impulse Voltage Condition in Foggy Weather

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Abstract— This paper presents a study about electric field behaviour of 10kV polymer insulator with moss deposition under foggy condition. The aim of this simulation experiment was to determine if this field affect the initiation of pollution flashover. To study this effect, simulations were carried out using High Frequency Structure Simulator (HFSS). The simulation experiment includes the results of electric field distribution along the insulator and also the magnitude of electric field at three different locations in identifying the parts of the insulator's surface that likely to initiate pollution flashover. The moss deposited polymer insulator displayed uniformed and considerably intense distribution of electric field with the clean insulator. The field result showed the likelihood in discharging a corona effect. In short, the results indicated that electric field along the insulator surface would likely be influenced by moss deposition and foggy air.

Keywords: Polymer insulator; Moss Deposited; Electric Field