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Electric Field Investigation in MV PILC Cables with Void Defect

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Abstract : Worldwide, most PILC MV underground cables in use are approaching the end of their design life; hence, failures are likely to increase. This paper studies the electric field and potential distributions within the PILC insulted cable containing common void-defect. The finite element model of the performance of the belted PILC MV underground cable is presented. The variation of the electric field stress within the cable using the Finite Element Method (FEM) is concentrated. The effects of the void-defect within the insulation are given. Outcomes will lead to deeper understanding of the modeling of Paper Insulated Lead Covered (PILC) and electric field response of belted PILC insulted cable containing void defect.

Keywords : MV PILC cables, finite element model/COMSOL multiphysics, electric field stress, partial discharge degradation
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