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Dielectric Characterization of Thermally Aged XLPE High Voltage Cable Insulation

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Abstract : The widespread use of crosslinked polyethylene (XLPE) as insulation in high voltage power cables may be attributed to its excellent electrical, thermal and mechanical characteristics. However, this insulation may undergo crucial degradations when exposed to the various constraints, which lead to its general weakness. During its operating under service conditions, the cable is in permanence subjected to thermal aging which can provoke an irreversible alteration of the cable insulation properties. This work presents an investigation on the changes induced in the dielectric and electrical properties of athermally aged XLPE cables insulation.

Keywords : Crosslinked polyethylene (XLPE), insulation, thermal aging, dielectric properties.