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MODELING OF ELECTRIC FIELD IN CABLE TERMINATION WITH STRESS CONTROL TUBE

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Abstract

The electric field distribution in the end termination of medium-voltage cross-linked polyethylene insulated power cable is studied by computer modeling. The stress control tube is used in the cable termination to reduce field nonuniformity. The dependence of conductivity of the cable insulation on electric intensity and the tube length in axial direction are taken into account. The conductivity and dielectric permittivity of tube material are varied. The possible defects owing to insulation surface roughness and air bubbles under stress control tube are considered. The practical relevance of attained results is associated with selection of the length and material of field-grading tube and with ensuring of electric strength of cable insulation at availability of defects on its external surface. References 12, figures 4, table 1.

Key words: cable termination, stress control tube, defects of insulation surface, improper tube shrinkage, computer modeling.

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