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ELECTRIC FIELD DISTRIBUTION IN MEDIUM-VOLTAGE XLPE CABLE TERMINATION TAKING INTO ACCOUNT OUTER SEMICONDUCTING LAYER

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Author
Kucheriava I.M.
Institute of Electrodynamics National Academy of Science of Ukraine,
Pr. Peremogy, 56, Kyiv-57, 03680, Ukraine,
e-mail: rb.irinan@gmail.com

Abstract

The computer modeling of electric field in the termination of medium-voltage (10 kV) cross-linked polyethylene insulated power cable is carried out. The stress-control tube and mastic are used in the termination to reduce the field nonuniformity. The electric field distributions are examined at different stress control tube positions relative to the cutting ends of the cable outer semiconducting layer and copper wire shield. The properties of stress control tube and mastic are varied to determine their influence on maximum electric intensity in the cable insulation. The results and used approaches to the study of electric field can be applied to design the terminations allowing for the appropriate materials and arrangement of structural parts. References 11, figures 5, table 1.

Key words: cable termination, power cable, polyethylene insulation, outer semiconducting layer, field grading tube, stress control mastic, computer modeling.

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