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NUMERICAL STUDY OF ELECTRIC FIELD DISTRIBUTION IN HIGH-VOLTAGE CABLE TERMINATION WITH STRESS CONTROL CONE

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Author

Kucheriava I.M.

Institute of Electrodynamics National Academy of Sciences of Ukraine,
pr. Peremohy, 56, Kyiv, 03057, Ukraine,
e-mail: rb.iran@gmail.com

Abstract

The electric field distribution in the vicinity of stress cone of high-voltage XLPE insulated cable termination (110 kV) is studied by computer modeling. The dependence of cable insulation conductivity on electric intensity and the different cone positions relative to the cutting ends of the cable outer semiconducting layer and copper wire shield are taken into account. The stress control cone is considered both in the form of only cone reflector and as a complete stress cone with insulation body. The peculiarities of field distribution depending on the cone shape and surface roughness are analyzed. The attained results are of interest for designing and improvement of up-to-date high- and extra- high-voltage cable terminations. References 13, figures 5, table 1.

Key words: cross linked polyethylene (XLPE) insulated power cable, high-voltage cable termination, stress control cone, cone position relative to cable components, surface roughness of cone, computer modeling.

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