DOI: https://doi.org/10.15407/techned2016.02.019

COMPUTER STUDY OF THE WAYS FOR ELECTRIC FIELD GRADING IN SEALING ENDS OF POLYETHYLENE-INSULATED CABLES

Journal	Tekhnichna elektrodynamika
Publisher	Institute of Electrodynamics National Academy of Science of Ukraine
ISSN	1607-7970 (print), 2218-1903 (online)
Issue	№ 2, 2016 (March/April)
Pages	19 – 24

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Abstract

The electric field in sealing ends of high-voltage power cables with cross-linked polyethylene insulation is computed by simplified model. The different ways for field grading in the cable sealing end are considered. As shown, the degree of electric field uniformity in the cable box depends on geometric parameters of field-grading tube, its electrophysical properties (conductivity and dielectric permittivity), on stress cone shape as well as on the distance of cone top to cable insulation surface. The developed approaches to computer modeling can be used to select the materials for cable box elements and to optimize their construction. References 11, figures 5, tables 2.

Key words: cable sealing end, high-voltage cable, polyethylene insulation, field-grading tube, stress control cone, computer modeling.

Received: 20.11.2015
Accepted: 08.12.2015
Published: 18.03.2016

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