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STUDY OF ELECTROCUTION HAZARDS IN THREE-PHASE ELECTRICAL NETWORKS WITH GROUND-ISOLATED NEUTRAL POINT

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Abstract

This paper analyses the electrocution hazard in three-phase electrical networks that operate with the neutral point isolated from ground. The following cases are analyzed: short low-voltage electrical networks, long low-voltage electrical networks and high-voltage networks. In high voltage electrical networks, touching a phase is always dangerous even if the insulation resistances are considered to be infinitely high. The analyzed cases show that in three-phase electrical networks with ground-isolated neutral point, the value of the current which passes through the human body depends on its electrical resistance as well as on the insulation resistances of the phases to earth.

Key words: conductance, electrocution hazard, insulation resistance, network capacity, neutral point

Received: February, 2012; Revised final: June, 2012; Accepted: July, 2012

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