

Analysis of the Actual Situation Regarding the Methods of Processing the Neutral in the 6-35 kV Networks

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Abstract - The paper is dedicated to the analysis of the possibility of reducing the overvoltage surges in case of accidents in the medium voltage networks by modifying the mode of treatment of the neutral, which will allow extending the service life of the cables in operation. The treatment problem of the neutral in the 6-35 kV distribution networks has a particular importance for distribution of the electrical energy. The chosen solution for treatment the neutral is done for a long period, regarding a large volume of investment and a very careful technical argumentation so as the chosen solution should be the best for the considered network. In the Republic of Moldova, most of the 6-35 kV distribution networks operate under capacitive mode by means of the arc suppression coil (ASC). There is also a small number of transformer substations in which the neutral is insulated. The treatment of the neutral by resistance is not implemented, thus it is necessary to investigate a study concerning the applying of this neutral treatment method.

Keywords— neutral treatment; insulated neutral; compressed neutral; arc suppression coil; treated neutral by resistance; low value resistance; high value resistance; earth power current

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