

SPD application for protection of 0.4 kV equipment in CTS.

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The necessity of overvoltages limitation in low voltage networks is due to the low electrical strength of their insulation. One of the most effective means of surge protection is the hardware protection of equipment using surge protection devices (SPD). This article discusses the main cases of the effects of lightning overvoltages on the equipment of 0.4 kV of complete transformer substations: lightning strikes in housing of substation, in outgoing 0.4 kV overhead lines and supplying 6–20 kV overhead lines. The possibility of transferring hazardous lightning overvoltages from a high-voltage transformer winding to a 0.4 kV winding is shown. Based on the analysis and calculations, recommendations are given on the use of SPD.

Keywords: surge protective device, lightning stroke, complete transformer substation, transformer.