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LIGHTNING INDUCED VOLTAGES ON DISTRIBUTION
TRANSFORMERS - THE EFFECTS OF LINE LATERALS
AND OF NEARBY BUILDINGS

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Abstract - This paper presents some experimental results of an investigation on the effects of laterals and nearby buildings on the lightning induced voltages on urban overhead distribution lines. By making use of a 1:50 scale model, tests were performed considering a typical distribution line configuration, including the simulation of the neutral conductor, laterals, buildings and equipment such as arresters and transformers. Comparisons between voltages induced at the HV transformers terminals are presented for different buildings heights and transformer locations. The results show that in some circumstances the laterals and the presence of structures close to the line may affect the induced voltages significantly.