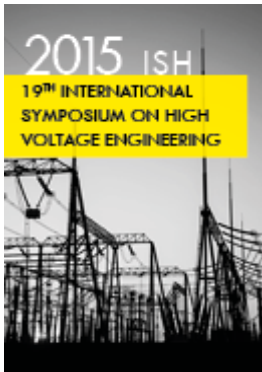


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**An influential analysis for the parasitic capacitance to the overvoltage of vacuum circuit breaker switching capacitor banks**

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## Abstracts

Capacitor banks is one of the important reactive power compensation equipment in power system, usually vacuum circuit breaker is used for its switching. It will produce the overvoltage when the restrike occurs in the vacuum circuit breaker opening capacitor banks. The overvoltage may damage vacuum circuit breakers, capacitors or other electrical equipment. With actual operation, the vacuum circuit breaker is usually used in the cable system for reactive power compensation circuit. So the existence of the parasitic capacitance in the system will inevitably involved in the process of the vacuum circuit breaker switching capacitor banks. In this paper, combined with typical compensation circuit in the transformer substation, the distribution of the parasitic capacitance is analyzed for the impact of the vacuum circuit breaker opening capacitor banks when the overvoltage appears. Through the equivalent experiment was carried out in the laboratory, it is proved that the parasitic capacitance branch current for the power side and load side has been existed. The branch current is high frequency and amplitude. In this case, the overvoltage waveforms and data has been obtained when the restrike occurs in the vacuum circuit breaker opening capacitor banks. The results show that due to the existence of the parasitic capacitance for compensation circuit to the overvoltage of vacuum circuit breaker switching capacitor banks is an influential. So the parasitic capacitance should be considered in the overvoltage analysis of vacuum circuit breaker switching capacitor banks.