

## ANALYSIS OF FAULTS ON MONOPOLAR HVDC TRANSMISSION LINE

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### ABSTRACT

The HVDC transmission lines are used for power transmission over long distances, inevitably passing through the complex terrain and operating under harsh weather conditions. Therefore, HVDC transmission lines are susceptible to the faults. This paper presents the analysis of faults on monopolar HVDC transmission line. The impact of LG fault on ac side, ground fault on the dc side, synchronized ac and dc faults, and unsynchronized ac and dc faults on the voltage, current and performance of the converter is investigated. A test system having monopolar HVDC transmission line connected between two utility networks is modeled in MATLAB/Simulink environment.

**KEYWORDS:** HVDC Transmission Line, Fault, Rectifier, Inverter, Utility Power Network, Power System Model