

عنوان مقاله:

Natural Frequency Based Protection for Star-Connected Multiterminal VSC-HVDC Transmission Lines

محل انتشار:

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خلاصه مقاله:

In this paper, a fault locating method based on natural frequency has been proposed for VSC-HVDC star-connected multi-terminal lines. When fault occurs at the transmission lines, some transient travelling waves appear by the form of a frequency spectrum in the voltage and current signals and propagates from the fault location to the both sides of the line. In this method, by measuring the current signals at each terminal without the need of determining the arrive time of transient waves and synchronous link to other terminals, the fault-produced frequency spectrum could be determined at each terminal and then by determining the dominant frequency component and calculating the velocity of the waves at each line, the faulty terminal and fault location would be detected. To determine the dominant frequency component, Fourier transform analysis (FFT) was used in this algorithm. Simulation results show that the proposed method is satisfactory and with appropriate accuracy and speed is able to determine the occurred faults on the protected lines.

کلمات کلیدی:

Fault location, Multiterminal VSC-HVDC, Natural Frequency, Fourier Transform

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