

Voltage source inverter commutation failure





Overview

When does a yd inverter fail to commute?

When the commutation first occurs in the YY inverter, it's assumed that the commutation failure first occurs in the commutation of V12 to V32. Since the short-circuit path is formed when V42 is conducted, the YD inverter will fail to commute during the commutation of V21 to V41. The commutation process is shown as Fig. 7 (a).

What causes commutation failure of a converter valve?

During the operation of inverters, when the time (angle γ) of applying negative voltage on the valve that has just been turned off is shorter than the time required for it to restore the blocking capability and the valve is conducted again when positive voltage is applied, commutation failure of the converter valve would occur.

Does DC commutation failure cause transient overvoltage?

, lacking strict theoretical derivation and proof. In response to the transient overvoltage problem caused by DC commutation failure or blocking, ElMehdi et al. (2014) considered the impact of transient overvoltage on wind farms and analyzed the determinants of reactive power compensation capacity of high-voltage DC systems and the dynamic.

What causes commutation failure?

on the causes and criteria of commutation failure. Kristmundsson and Carroll (1990) analyzed the mechanism of the impact of symmetrical faults and asymmetrical faults on commutation failure and the factors such as DC current, commutation bus voltage, trigger lead angle, line voltage phase shift during asymmet



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A commutation failure risk analysis method considering the ...

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Mechanism analysis of inverter commutation failure caused by voltage

The voltage recovery of commutation bus on the rectifier side in AC/DC system always leads to the increases of DC current, thus resulting in the inverter commutation failure. In order to solve ...

Commutation Failure

Commutation failure (CF) is defined as a condition in line-commutated converters where the extinction angle γ -nominal falls below the minimum value γ -min, causing the outgoing valve to ...

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