

电力电子与电力传动

VSC-HVDC换流阀过电流关断试验方法

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摘要:

过电流关断试验是柔性直流输电(voltage sourced converter based high voltage direct current transmission, VSC-HVDC)换流阀暂态试验之一, 是为了检验换流阀设计的正确性及对桥臂直通工况应力耐受性进行的试验。研究阀过电流关断试验的试验方法, 分析桥臂直通工况下的应力, 提出等效试验方法并设计试验电路, 最后给出试验电路中阀的应力波形与实际工况下应力波形的对比, 结合关键应力等效性分析, 验证试验方法和试验电路的等效性。

关键词: 过电流关断试验 柔性直流输电换流阀 桥臂直通 等效试验方法

Test Method of the Overcurrent Turn-off Test for Voltage Sourced Converter Based High Voltage Direct Current Transmission Valves

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Abstract:

The overcurrent turn-off test is one of the transient state test of voltage sourced converter based high voltage direct current transmission (VSC-HVDC) valves, which is to verify the design validity and the short circuit across state stress tolerance of valves. The test method of the overcurrent turn-off test was investigated. The stresses related to the short circuit across state were analyzed, then the equivalent test methods and test circuit were designed. At the end of this paper the contrast of the stresses waveforms between the ones in actual operating state and the ones in test circuits was shown, combined with the analysis of equivalence of key stresses, the equivalence of test methods and the test circuits was proved.

Keywords: overcurrent turn-off test voltage-sourced converter based high voltage direct current transmission (VSC-HVDC) valves short circuit across state equivalent test methods

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