



直流输电系统100 Hz保护的相关问题研究  
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**摘要:** 运行经验表明, 在距离换流站较远的地方发生交流系统故障, 仍有可能导致换流站内100 Hz保护动作。从直流线路电流中100 Hz分量的产生机理着手, 提出100 Hz保护主要作为交流系统故障时直流的后备保护, 不需考虑交直流系统及阀故障时直流设备的过负荷能力, 保护动作延时只需考虑交流系统后备保护清除故障时间的原则, 并就直流100 Hz电流长时间存在时对阀、换流变等直流设备以及系统功率波动的影响进行了深入分析, 结果显示不会对现有直流设备造成危害。新的100 Hz保护设置原则已用于天广、高肇、兴安直流工程。

**关键词:** 直流输电; 100 Hz保护; 负序电压; 过负荷

Relative Issues of 100 Hz Protection for HVDC Systems

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**Abstract:** It is indicated by operation experience that 100 Hz protection for HVDC systems may react even as AC system fault location is far away from converter stations. This paper discusses the mechanism of 100 Hz component occurring in DC line current, and presents a new principle for coordinating 100 Hz protection with AC system protection, that is, to take 100 Hz protection as the backup protection to AC system fault, and consider its time delay coordination with the maximum backup fault clearing time without paying attention to the overload capability of HVDC equipments. The influence of long existing 100 Hz current to HVDC equipments such as valves and transformers, and transmission power fluctuating is also analyzed, showing no harm at all. The new principle for setting 100 Hz protection has been used in GG1, GG2 and TSQ projects.

**Key words:** HVDC; 100 Hz protection; negative sequence voltage; over load

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