

自动化

IEEE电容器组保护新理念及对我国标准制定工作的启示

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摘要

我国现行标准在内熔丝电容器组的保护和应用方面仍是空白, 文章对IEEE C37.99-2000《IEEE并联电容器组保护导则》的主要内容和特点, 尤其是反映现代内熔丝电容器组不平衡保护技术的若干新理念作了介绍, 旨在建议标准制定组织借鉴国际先进电容器组保护技术, 尽快修订传统的外熔丝电容器组保护的国内标准。《导则》将内熔丝电容器组作为4类典型的电容器配置之一, 提出应以“内熔丝最大开断根数”作为不平衡保护跳闸整定的重要判据、以“弧光短路立即跳闸”作为不平衡保护跳闸延时取值的重要条件来建立内熔丝电容器组内部故障快速反应机制, 提出应在内熔丝开断1~2根后发出报警信号以便在计划检修时进行更换, 以弥补不平衡保护存在的“漏洞”。

关键词 [电力电容器](#) [保护](#) [不平衡保护](#) [整定方法](#) [可靠性分析](#)

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New Idea in IEEE Guide for Protection of Shunt Capacitor Banks and Its Enlightenment for Working out Related Standards in China

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Abstract

The protection for shunt capacitor bank with internal fuse and its application are still blank in current domestic standards in China. In this paper, main contents and features of IEEE C37.99-2000, i.e., the IEEE Guide for Protection of Shunt Capacitor Banks, and several new ideas reflecting unbalance protection technique for modern capacitor bank with internal fuse are presented in order that to propose the organization that works out standards to draw lessons from advanced capacitor bank protection technique abroad and to revise related domestic standards in the protection for traditional capacitor bank with external fuse. In IEEE C37.99-2000 the capacitor bank with internal fuse is regarded as one of four typical capacitor configurations and it is put forward that the maximum fused number of internal fuses should be regarded as an important criterion for the setting of the trip of unbalance protection as well as the immediate trip under arc short-circuit should be regarded as an important condition for setting the time-delay of unbalance protection to establish the quick reaction mechanism for internal fault occurred in capacitor bank with internal fuse. Thus, it is proposed to alarm after one or two internal fuses are fused in order that to replace them during the scheduled maintenance to remedy the defects existing in unbalance protection.

Key words [power capacitor](#) [protection](#) [unbalance protection](#) [setting method](#) [reliability analysis](#)

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