

### 特高压输电技术

#### 特高压变压器差动保护研究

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**摘要:** 我国最高电压等级1 000 kV系统变压器由于电压等级高、容量大, 其主接线方式和调压方式都与500 kV变压器有着显著不同, 这也决定了1 000 kV特高压变压器的差动保护配置与传统变压器差动保护有所不同。该文针对1 000 kV特高压变压器的接线方式和故障特点提出适合特高压变压器的差动保护配置方式, 并在保护装置中实现, 通过电科院动模试验验证, 并在现场成功实际投入运行, 证明了保护配置的正确性和有效性。

**关键词:** 特高压变压器 调压变 补偿变 差动保护 强迫性励磁涌流

#### Study on Differential Protection of UHV Transformer

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**Abstract:** The differential protection configuration of the 1 000 kV UHV transformer is different from that of the traditional transformer due to the large capacity, high voltage level, and the main wiring mode and voltage regulating method that are different from the 500 kV transformer. In this paper, a new configuration of differential protection was proposed based on the wiring mode and fault characteristics of the 1 000 kV UHV transformer. The configuration had been applied in protection devices, and has been verified by the dynamic simulation test made in the laboratory of CEPRI. Besides, the protection devices under the proposed configuration have been successfully put into operation on site. Therefore the correctness and effectiveness of the protection configuration are proven.

**Keywords:** UHV transformer regulating transformer compensating transformer differential protection force excitation surge current

收稿日期 2009-07-16 修回日期 2009-07-17 网络版发布日期 2009-08-17

DOI:

基金项目:

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