

自动化

基于IEC 61850的变电站间隔层保护监控设备硬件设计框架

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摘要

依据IEC 61850标准构建了变电站自动化系统各逻辑接口到物理接口的映射模型, 提出了基于分布式信息处理模式的变电站间隔层保护监控设备硬件框架, 以高压线路间隔为例, 阐述了该设备内部插件的功能分配情况。文章还构造了由新型保护监控硬件设备组成的间隔层局域网, 对该网络的负荷及延时进行了模拟计算和分析, 结果表明, 新型结构的保护监控设备能够满足变电站间隔层局域网的通信实时性要求, 具有可行性。

关键词

[IEC 61850; 变电站自动化系统; 间隔层; 过程层; 抽象通信服务接口\(ACSI\); 物理接口; 通信网络性能](#)

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IEC 61850 Based Design Framework of Hardware for Protection and Monitoring Devices of Bay Level in Substation Automation System

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Abstract

In this paper a mapping model that maps various logical interfaces in substation automation system to independent physical interfaces is constructed according to IEC 61850 standard and a distributed information-processing mode based hardware framework for protection and monitoring devices of the bay level is proposed. Taking the bay of high voltage transmission line for example, the function allocation condition of the plug-in units of this equipment is expounded. In addition, a bay level local area network (LAN) consisting of new types of protection and monitoring devices is built. The results of calculation and analysis of the load and time-delay in this LAN show that by use of the protection and monitoring devices based on the constructed hardware structure, the requirement of real-time communication in the LAN for substation bay level can be satisfied.

Key words

[IEC 61850; substation automation system; bay level; process level; abstract communication service interface \(ACSI\); physical interface; performance of communication network](#)

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