

S4-4 Research on Standard Technical Infrastructure of Communication System for Smart Grid

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Abstract

As the public platform and important means for supporting the building of strong and Smart Grid, communications system interlinks the six parts of electricity, such as power generation, transmission, substations, distribution, customer service, and power dispatch, as well as the information platform for normal operation. Communications standard system for Smart Grid is the communications technology standards, merging into a scientific composition in accordance with its inherent logic, integrity and openness. The standards system aims to ensure interoperability, to lead the direction of technology development. The relationships between equipment/system life cycle of power network and communications network are analyzed. The reliable influence model of power network and communications network relations has been constructed. Based on the research of the setup procedure of the supporting Smart Grid's communications standard frame, communications standard renewal iteration feedback mechanism, and the communications standard appraisal system, the Smart Grid's communications standard system frame is presented. The relative plot has enumerated eight aspects which the communications standard system needs to balance, namely openness, compatibility, interoperability, cooperativity, logicity, security, efficiency, and economy. For example, openness and the security must balance, so as to coordinate the proper attention and avoid mutually contradictory. This paper also proposed Smart Grid communications specialized standardization conceptual model, including transport layer, carrying layer and service layer.