



广东电网WAMS增强SCADA状态估计研究
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摘要: 针对电力系统中WAMS和SCADA量测共存的现状, 研究利用WAMS量测来增强状态估计性能。给出了当前状态估计中基于WAMS量测的不同算法, 对如何使用不同类型的WAMS量测进行了分析, 并使用了相角差量测, 使WAMS量测能够很好的应用到状态估计中, 以增强估计性能。最后针对WAMS的实时性特点, 提出了基于WAMS增量的局部追踪状态估计方法。以广东电网实时模型为基础进行的不同负荷变化时段的试验研究证明了该方法的有效性和正确性。

关键词: 状态估计; 局部追踪状态估计; SCADA; 广域测量系统 (WAMS); 相量测量单元 (PMU)

Research on SCADA State Estimation Enhanced by WAMS in
Guangdong Power Grid

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Abstract: Under the condition that WAMS and SCADA co-exist in power system, an experment is carried out on how to improve the performance of state estimation by WAMS. Different current methods of state estimation based on WAMS are given, applications of different measurements of WAMS are analyzed. The phase angle difference is adopted to make the measurements of WAMS be applied better in SCADA state estimation. Finally, based on the real-time characteristics of WAMS, a partly tracing state estimation method with WAMS increment is proposed. The method is tested on real-time model of Guangdong Power Grid at different load changing periods. The result proves the effectiveness and correctness of partly tracing state estimation.

Key words: state estimation; partly tracing state estimation; SCADA; WAMS; PMU

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