Design and Applied Research of the Distributed Real-time Database in Smart Grid

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***Abstract*—Real-time database systems combined with distributed architecture possess the capability to satisfy the timing constraints and preserve the data consistency while storing and processing the massive real-time data in the smart grid. In this thesis, we first review the current situation of the research on distributed real-time database. Then according to the characteristics of the electricity data in the smart grid, we design and implement a distributed real-time database. At present, this new distributed real-time database has been already applied into many business systems in State Grid Corporation of China. It presents good stability and accuracy, and provides a reliable real-time data support to the construction of smart grid in China.**

***Keyword*—Distributed, real-time database, smart grid, electric energy data acquire system**

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