

Electric energy saving control method of water conservancy project based on cloud computing

Qiang Wang^{a,b,*}, Ke Yao^a, Pyeoung-Kee Kim^b

^aCollege of Architecture and Information Engineering, Shandong Vocational College of Industry, Zibo 256414, China, email: zbwq2020@126.com (Q. Wang)

^bDivision of Computer Software Engineering, Silla University, Busan 612022, South Korea

Received 17 August 2021; Accepted 23 September 2021

ABSTRACT

With the increasing number of water conservancy and hydropower projects, in order to better meet the objective requirements of energy saving and consumption reduction, this paper puts forward the research on electrical energy-saving control methods of hydraulic engineering based on cloud computing. From the point of view of analyzing the main causes of power waste in water conservancy projects, this paper constructs a data model of electrical energy consumption of water conservancy projects based on cloud computing, completes the electrical energy-saving design of water conservancy projects through a data energy-saving algorithm classification and data energy-saving algorithm based on dynamic voltage and frequency scaling, realizes the evaluation of energy efficiency index of electrical energy consumption data, and finally designs a three-phase asynchronous motor dual CPU system based on cloud computing design. Through the experiment, it is proved that the energy-saving effect is obvious, which effectively improves the utilization rate of water conservancy and electric power energy, greatly improves the quality of people's lives, and provides a reference for improving the operation effect of water conservancy projects.

Keywords: Cloud computing; Water conservancy project; Electricity; Energy saving; Three-phase asynchronous motor

* Corresponding author.