

Analysis of the Application Strategy of Electrical Automation Technology in Power System

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Abstract: With the steady development of China's national economy and the rapid growth of population, the demand for electricity is growing. Electricity affects people's life and production. Therefore, in order to meet the requirements of social development, electrical automation technology emerges as the times require, and has been widely recognized by all walks of society. By analyzing the development status of the electrical automation, this paper explores its application in the power system, with a view to promoting social development.

Keywords: Electrical automation technology; Power system; Application strategy

1. Introduction

With the start of China's reform and opening up, science and technology have made great development, of which the electrical automation technology has made tremendous contribution to the development of China's power industry. Electrical automation technology has undergone several stages of development from invention to wide application. Its continuous reform, optimization and innovation have made great progress. Electrical automation technology can be applied in all walks of life and various fields, the small electrical switch and the large spacecraft are inseparable from its help, but it is widely used in the field of electrical power systems. In this field, electrical automation technology is relatively more mature, mainly including the replacement of various crystal materials and the application of computer Internet technology [1]. With the addition of electrical automation technology, the power system has been developed towards a scientific and efficient direction. The work mode of the traditional power system has been transformed to realize the automation and intelligence of power services, which provides a reliable guarantee for future power system development. At the same time, in order to ensure the sustainable development of power system, our country has provided a lot of funding and talent support on the technical research of electrical automation technology, for example, encouraging related electrical enterprises to research and develop the equipment. By analyzing the development status of the electrical automation, this paper explores its application in the power system, with a view to promoting social development.

2. The Development Status of the Electrical Automation

The development of electrical automation technology is closely related to the development of science and technology and information technology in our country. In China's power system, the application of electrical automation to information technology is very common. It not only makes the operation of the machine more convenient and more flexible in power system, but also makes the processing and analysis of information data faster and more effective. For example, when a fault occurs in the operation of power system, the electrical automation technology can find problems faster than human beings, analyze the causes of the problems and find the best solution in the quickest time to ensure the stability of the power system operation and improve the efficiency of the power system. And more importantly, electrical automation, just as its name suggests, favors the automated management of machines, helping to reduce manual labor and save a lot of human resources. Even though the key components require manual intervention, compared to the traditional technology, the operation steps of electrical automation are more simple and can be well controlled.

3. The Application of Electrical Automation in power System

Through the above description of the development status of electrical automation, we have a certain understanding of it. On this basis, the application of electrical automation technology in power system is explored and analyzed in the following.

3.1. Application of Simulation Technology

In the operation process of power system, the simulation technology in the electrical automation technology has played an important role. The power systems without electrical automation technology often need to collect the data and information generated during the operation, and then carry out simulation experiments and simulations, and only the results meet the requirements, can they be continued [2]. However, with the addition of simulation technology, the data information is collected by computer technology and then transmitted to the data terminal of the power plant via the Internet. And the terminal equipment has a certain intelligent system. Finally, through the simulation technology in the intelligent system, the various data and information in the operation process of power system is audited and assessed, which is shown in Figure 1. The application of simulation technology has perfected China's power system, improved the work efficiency of the power system, saved the power resources and reduced the capital cost.

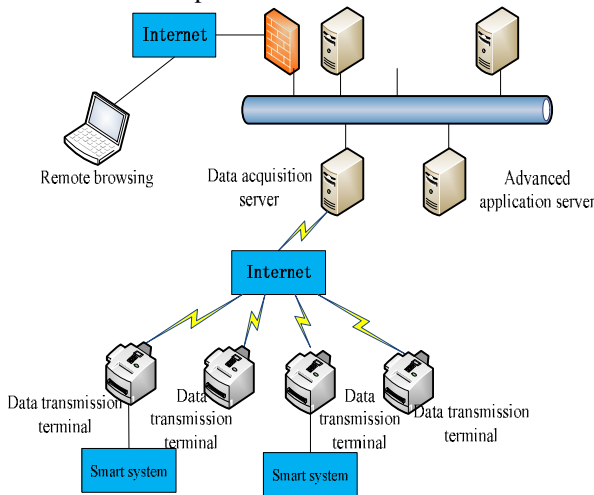


Figure 1. Application Process of Simulation Technology

3.2. Application of Intelligent Technology

The application of intelligent technology in electrical automation improves the power system's sensitivity. Before the electrical automation technology was not used in the power system, the conventional power system often required a lot of manpower and tools to conduct a one-by-one investigation on the operation of power system in the event of a fault, which wastes a lot of resources, increases the workload and reduces the work efficiency of power system [3]. However, with the addition of intelligent technology in electrical automation, the problems in the power system are found and analyzed through the automated terminal FTU, and then they are uploaded to the testing center, and the causes of the problems is analyzed through the testing center, and finally for the reasons, the corresponding treatment and maintenance is

carried out, greatly reducing people's workload and improving their work efficiency, which is shown in Figure 2 [4].

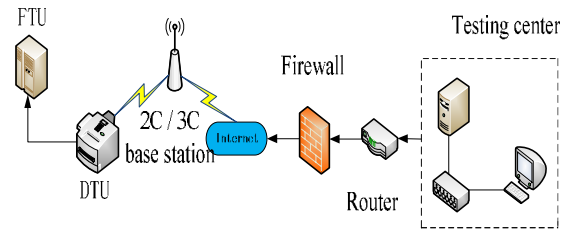


Figure 2. The workflow of intelligent technology

3.3. Application of Power Grid Technology

Power grid technology is the core power of the whole power system operation. Therefore, the invention and application of electrical automation technology make the dispatching between power grids more flexible and effective. Due to the different economic level and geographical environment of different regions in China, there are different requirements for electric power in each area, such as distribution network with 13kV and 4kV, distribution network of 240V and 120V, and distribution network of 69kV and 26kV. In order to meet the different requirements of each region, the processing of power system will become very complex, which will lead to the reduction of efficiency, the increase of cost and the waste of resources [5]. With the application of electrical automation technology, the power system will automatically dispatch the power automatically according to different requirements, which can improve work efficiency and enhance the control of the power system.

4. Conclusions

With the development of information technology, electrical automation technology has been developed and widely used in various fields, especially in power system [6]. The application of electrical automation technology has made up for the previous shortcomings of power system, and promoted the development of simulation technology, intelligent technology and power grid technology, and improved the work efficiency, which is fully proved that "science and technology are primary productive force" and establishes the solid material foundation for the development of our national economy. But opportunities and challenges coexist. The development of society will inevitably require the support of higher technology, so we will continue to study and explore, and make greater contribution to the development of our society and the progress of mankind.

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