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Intelligent Application of Electrical Engineering Automation Based on Power System

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Abstract: The economic development of the country is in full swing, and all industries are constantly moving forward following the footsteps of economic development. In recent years, the electric power industry, driven by the country's economic development, including mechatronics, electrical engineering and automation, thermal and power engineering, nuclear engineering and nuclear technology, wind energy and power engineering, electrical engineering and automation, and other industries have made rapid development, among which the development of electrical engineering is the most rapid, and has made greater achievements. Electrical engineering not only keeps pace with the development concept of social modernization, but also absorbs the traditional technology and draws on foreign success stories, constantly innovates, and drives the development of the whole industry. The emergence and universal application of intelligent technology in electrical engineering not only strengthens the ability of electrical equipment to carry out automation control, but it also lays a solid foundation for the rapid and safe operation of electrical engineering. This paper elaborates on the concept, characteristics, technologies used, problems and solutions of electrical engineering.

Keywords: Power systems; Electrical engineering; Automation

Introduction

Accompanied by the rapid development of science and technology, especially into the 21st century, China's scientific and technological development is a big step forward, the more significant is the integration of electrical engineering and information technology more specific, scientific and technological information and electrical engineering to further combine, to a large extent, to promote the further acceleration of electrical engineering automation. And in order to cope with those early loopholes, and the introduction of intelligent technology, in order to enhance the level of electrical engineering automation. With the full use of intelligent technology, still in the early stages of development of engineering automation control has a broader space for development.

1. The significance of the application of intelligent technology of electrical engineering automation

In China's many science and technology, electrical automation discipline as a service to the electrical engineering technology, can effectively enhance the electrical engineering automation office capacity, to promote the stable development of China's electrical cause is of great significance. Specifically embodied in the following aspects: The application of intelligent technology can effectively carry out electronic information technology processing, electrical engineering operation, enterprise comprehensive management and agricultural irrigation, providing a technical basis for agriculture, in enhancing the quality and efficiency of enterprise work at the same time, reduce the cost of investment, improve economic efficiency. Intelligent technology has a strong utilization rate and wide range, which enables people to share all kinds of information resources through electronic computers, improves people's cognitive ability to society, and establishes the creation of people's scientific self-confidence. The development and application of intelligent technology provides convenience for people, and at the same time, it also dyes people with the help of the basic principle of computer, improves the complex working environment and improves the working efficiency.

2. Electrical automation intelligent control system in electrical engineering design concepts

2.1 The use of centralized monitoring design concept

Centralized monitoring type design when the application of electrical engineering maintenance is more convenient, and less demand-

ing, the system design is also easier. It uses a processor to centralize the various functions in the system to deal with, so the processor's task is quite heavy, and the speed is also affected. As far as we know, when there is a large increase in the number of monitoring objects for electrical equipment, there will be a subsequent downward trend in host redundancy, and the increase in the number of cables leads to increased investment, while the introduction of long distance cables will also affect the reliability on the system.

2.2 Utilize remote monitoring design concept

Remote monitoring in electrical engineering can save cables, save materials, and even reduce costs, and has the characteristics of flexible configuration and high reliability. However, in electrical engineering, the communication speed of the bus is often not high, and the communication volume is very large, so the remote monitoring method can only be used in smaller electrical engineering system monitoring, for the construction of larger electrical automation system control is not very suitable.

3. Intelligent application of power system electrical engineering automation

3.1 Accurate diagnosis of faults

In the electrical engineering automation operation process to increase the intelligent technology, once the equipment failure, can be targeted to diagnose the fault location in the system equipment, and will be the location of the system fault diagnostic data sent to the system operation center, to provide a basis for decision-making for the relevant staff. Intelligent technology and traditional automation technology, compared with the diagnostic speed and accuracy of the advantages of remote monitoring of the operating state of the electrical engineering system, can be accurately judged the faults that exist in the electrical engineering system. For example, in the process of electrical engineering automation control system operation, intelligent technology applied to the grid transformer protection, can monitor the transformer operating status in time, accurately determine the location of the transformer oil leakage, save staff time to investigate, provide a basis for decision-making for the staff, and improve the utilization rate of equipment operation.

3.2 Optimize automation design

The traditional equipment is operated through manual design, which requires design staff to have good comprehensive quality in the operation process. But the system in the operation process, by the influence of various factors, there are many safety hazards, which brings negative impact to the system equipment operation. Coupled with the complexity of the system equipment, different models, so it is more difficult to increase the modification of the system program. The organic combination of intelligent technology and electrical engineering automation control system can control the electrical engineering automation system through computer software and CAD technology, optimize the configuration of system resources, accurately determine the location of the fault, and improve the system operation efficiency and quality while reducing the time for staff to investigate.

3.3 Application of PLC technology

With the development of science and technology in China, PLC technology has also gained rapid development, playing an increasingly important role in electromechanical control. Therefore, PLC technology can be used to meet the relevant requirements of electrical engineering for power operation, better coordination of power production, and then effectively control electrical engineering and its automation.

4. The development trend of intelligent technology in electrical engineering automation

The introduction of intelligent technology in the operation of electrical engineering automation control system is the inevitable trend of the development of electrical equipment towards high efficiency, high speed and high precision. Specifically can be analyzed from the following aspects: the realization of functional diversification, the realization of electrical engineering automation, intelligent technology, functional diversification, which requires the full use of the built-in high-performance PLC, the user interface graphical and scientific computation visualization system, in accordance with their own needs and habits of editing, the establishment of the corresponding program system, in order to ensure that the user is able to operate with the help of the menu or window, so as to achieve convenient and fast purpose. The purpose of the program is to ensure that the user can operate with the help of menus or windows, so as to achieve convenience and speed. To comprehensively improve the system structure. At present, the requirements of the electric power engineering automation control system are getting higher and higher, and the traditional intelligent technology has been difficult to meet the demand for automated control of electrical engineering, so the intelligent technology can only develop in the direction of networking, integration, modularization and digitization, in order to meet the basic requirements for the operation of the automated control system with the modernization of the electrical engineering.

Conclusion

Accompanied by China's science and technology is changing day by day, intelligent technology is widely used in various fields, especially in the field of electrical engineering automation control. However, the application of intelligent technology in electrical engineering

automation must be combined with its own actual situation in order to achieve the most effective initial purpose. To bring the value of intelligent technology to full play, to achieve comprehensive automation control, in order to effectively improve the quality of electrical engineering enterprise products, economic efficiency and strongly promote its position in the social market competition.

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