

Research on the Application of Intelligent Technology in Electrical Automation

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Abstract

With the development of electrical engineering industry, the application of intelligent means in automatic technology processing can give full play to the role of intelligent fault diagnosis, intelligent fault control and intelligent project design according to the characteristics of electrical engineering, and meet the development needs of the current electrical engineering industry. This paper discusses the application of intelligent technology in electrical engineering and its automation.

Keywords

Intelligence; electrical engineering; electrical automation; technology application.

1. The Main Problems Existing in the Current Electrical Automation Technology

First of all, some automatic electrical equipment has not been timely repaired and maintained due to special problems such as working environment. The automatic electrical engineering in these environments will generate electromagnetic interference to the work of automatic electrical engineering due to adverse factors such as climate, weather, temperature and humidity. Therefore, the automatic electrical engineering will be damaged in the long-term operation. In addition, the currentThe problem of environmental pollution will also damage the structure of automatic electrical engineering, resulting in the normal operation of equipment; second, the operation and use of mechanical and electrical equipment operators will also have a greater impact on the operation of equipment.The current automatic electrical engineering in production and use will involve more complex working principles and design concepts. If the operators of the automatic electrical engineering do not have certain professional knowledge or operation skills, it is easy to cause equipment damage due to the wrong operation in the specific operation.

2. Key Measures to Effectively Improve the Quality of Automation

Effectively improve the reliability of electrical engineering automation.After many years of practical experience, it is shown that only by actively improving the quality of electrical engineering automation can the production efficiency be effectively improved, and at the same time, high-quality electrical engineering automation can also extend the service life of equipment. Therefore, the current development of all industries pay close attention to the quality of equipment when choosing electrical engineering automation. The quality of equipment has become whether the equipmentThe important index of best-selling, the factors affecting the quality of electrical engineering are diversified, including economy, safety and reliability mentioned above. But among the many factors, reliability is the basis of electrical engineering automation. The higher the reliability of electrical engineering automation, the less likely it is to have failure rate. The more reliable the electrical engineering people purchase, the

more reliable it is. The more reliable it can be used, the automation electrical engineering manufacturers will be able to survive in the increasingly competitive market.

3. Discussion on Electrical Engineering Automation Technology based on Intelligent Technology

3.1. Application of Intelligent Technology in Electrical Automation Control

At present, the main operation task of electrical engineering automation is to ensure the smooth operation of related electrical engineering and production. While the stability and safety of electrical engineering automation can be effectively improved, the normal operation of machinery must be guaranteed. Once the intelligent technology is applied in the automation of electrical engineering, the operation procedure of electrical engineering will be simplified, providing convenience for relevant operators. After the improvement of electrical engineering reliability, the accuracy and related quality level of electrical engineering will also be effectively improved, so the probability of error will be greatly reduced, so as to better serve users and enterprises.

3.2. Application of Intelligent Technology in the Operation Process of Electrical Engineering Automation

In the operation process of traditional automatic electrical engineering, the relevant operators need to actively manage each electrical engineering, and complete the maintenance and control of all equipment one by one. As we all know, the installation and use environment of automatic electrical equipment is often hard and bad, so the staff in the bad environment will not only produce bad working mood, but also have adverse effects on health in the hard working environment. At present, intelligent technology is applied in the automation production of electrical engineering, which makes remote monitoring and remote operation become reality.

3.3. Main Advantages of Applying Intelligent Technology in Electrical Engineering Automation

At present, the application of intelligent technology in electrical engineering automation shows many advantages, among which the application of intelligent technology can not only improve the operation quality of electrical engineering, but also effectively improve the operation efficiency of electrical engineering. From a specific point of view, it mainly includes the following advantages: first, the quality of industrial products produced by electrical engineering is effectively guaranteed. The application of intelligent technology in electrical engineering production mainly uses network high-tech technology, the Internet as the medium, and the computer as the control tool to achieve accurate and indistinguishable automatic control management of electrical engineering. This management method has a very small probability, compared with the artificial operation, the probability of intelligent technology to control and produce defective products is low; second, the application of Intelligent Technology After that, the production efficiency has been effectively improved. Due to the low efficiency of traditional manual operation of automatic electrical engineering, and the intelligent computer technology can realize the management of multiple electrical engineering simultaneous operation, which greatly improves the production efficiency; thirdly, the ability of detecting and reporting faults of electrical engineering is significantly improved. Since the application of intelligent computer technology, it has changed the slow fault reporting speed of electrical engineering, but also effectively improved the accuracy of fault reporting, making the maintenance and repair efficiency of automatic multi-functional electrical engineering higher.

4. Application of Intelligent Technology in Electrical Engineering and Automation

4.1. Technical Application of Fault Diagnosis

technology, we can combine the characteristics of long continuous working time of electrical engineering to build a fault diagnosis and treatment scheme, in order to ensure the effectiveness of electrical engineering fault treatment. First of all, before the failure of electrical equipment, through the use of intelligent monitoring equipment, it can monitor the failure information and the use status of the failure equipment, send the failure location in time, and improve the overall efficiency of system fault handling. Secondly, in electrical engineering, when the equipment detects unsafe problems, relevant personnel will be prompted to check. For example, in the use of intelligent equipment in electrical engineering, when the transformer leaks oil and forms gas, when the system detects the value abnormality, it will directly prompt relevant personnel to check, effectively improve the overall efficiency of fault diagnosis, and ensure the safety and stability of electrical system operation.

4.2. Control System Automation Technology

At present, the optimization of resource allocation is the main purpose of the development of modern science and technology in China, including electrical engineering projects and automation technology. The development and progress of both are for the optimization of resource allocation. The application of intelligent technology in electrical engineering is conducive to the development of electrical engineering, because it is not only conducive to promoting the development of office projects, reducing artificial waste and economic waste, reducing the risk and workload of work, but also effectively improving the efficiency and economic efficiency of electrical engineering automation, ensuring the accuracy of work, resources and environmental protection, and ensuring all work. People's personal safety.

4.3. Technology Application of Automation Design

With the development of electrical engineering industry, in the electrical automation design and project research and development, in order to meet the development needs of the times, it is necessary to strengthen the investment of technology, shorten the gap with advanced enterprises through technological innovation, and realize the use demand of electrical automatic control system. Generally, in the use of automation design technology, the specific application technology is reflected in the following aspects: ① distributed structure. In electrical engineering and its automation technology, through the use of distributed structure in intelligent technology, the operation stability of electrical automation system can be guaranteed. According to the production status of electrical engineering, independent functional modules can be established to reduce the risk of system use and provide reference for the stable operation of the system. ② In the use of CAD technology and computer-aided technology, it can better reduce the use time of automatic design system, enhance the intelligence of automatic design technology while ensuring the quality of system design, and provide support for the use of intelligent technology in electrical engineering and automation. ③ PLC technology. The traditional electrical equipment does not use PLC technology, but uses controller equipment. At present, PLC technology has been widely used in electrical engineering automation, and gradually replaced the controller equipment. The application of PLC technology in electrical engineering not only plays an optimization role, but also helps to improve the work efficiency of electrical engineering. PLC technology gradually occupies the core position in electrical engineering automation. The main reason for PLC technology to improve the work efficiency is that PLC technology can fully reflect the overall

monitoring of electrical equipment in electrical engineering. Compared with the traditional controller of electrical equipment, PLC technology is more scientific, reasonable, advanced, more comprehensive and high-quality performance, and the effect of application in electrical engineering is more obvious. The application of PLC technology reflects the role of intelligent technology, which can accurately switch and contact the distribution network lines to ensure the smooth operation of electrical equipment in electrical engineering. PLC technology is the inevitable product of the development of modern science and technology. To promote the development of intelligent technology, it is necessary to develop new technology that meets the current development requirements and scientific and technological standards. The emergence of PLC technology not only defines the application scope of electrical engineering, but also provides a monitoring system.

4.4. Grid Dispatching

Power grid dispatching is the main process of substation operation. Power grid dispatching should balance the power resource supply of multiple areas. Power grid dispatching includes computer service department, computer network, etc. connected with wide area network, it can realize the monitoring of the effectiveness of power grid work and reasonably control the power supply of power station. Effective application of intelligent technology can monitor the operation of power grid dispatching at any time, prevent power problems in power grid work, and ensure the work of electrical engineering can be carried out safely.

4.5. Optimization Design Technology

The automation control of electrical engineering is mainly to design and research electrical equipment. Therefore, it is necessary to optimize the design of electrical engineering to have a stable development. It is necessary for the staff to have professional quality and rich experience to ensure that the designed electrical engineering meets the needs of the times and is effectively combined with science and technology. In the application of optimization design, genetic algorithm needs to be used to add a variety of functions to a processor, the burden of the processor will increase, but when combined with intelligent technology, it can be remotely monitored, saving costs and materials, while also ensuring the safety of electrical engineering. For electrical engineering, the use of intelligent technology on the one hand can ensure safety, on the other hand can promote the development of electrical engineering, the application of optimization design technology can solve this problem.

5. Epilogue

Only the continuous innovation of electrical engineering technology can provide more guarantee for the economic development of the whole society. I believe that in the near future, intelligent technology will obtain new development achievements in the application of electrical engineering automation.

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