

Application Analysis of Intelligent Technology in Electrical Automatic Control Engineering

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Abstract: With the increase in electricity demand, the construction of electrical automatic control projects has become more and more in recent years. With the development of science and technology, electrical automatic control projects have also made technological breakthroughs, making electrical control projects intelligent. There has also been a certain development in this aspect. The current construction engineering is facing a series of quality problems. As a part of construction engineering, electrical engineering has also received the attention of many people. The quality of electrical engineering has a very important impact on people's lives. In the process of electrical engineering construction, in order to avoid more human error and inefficient work, intelligence has been introduced into electrical automatic control engineering in large numbers, which has significantly improved and improved the quality of construction engineering. This article focuses on the analysis of electrical automation engineering. Intelligent analysis.

1. Introduction

With the development of social economy, the construction industry has also risen, and the related electrical engineering has also received people's attention. The quality of electrical engineering has a serious impact on the quality of construction projects and also affects people's lives. Electricity as a society an indispensable part of development, quality issues have always been people's concerns. At present, in order to improve work efficiency and engineering quality, electrical engineering adopts automatic control engineering intelligent technology, which improves its position in the market for electrical engineering. As well as competitiveness, it is also extremely important to the development of society.

2. The advantages of intelligent electrical automatic control

2.1 Unmanned control function

Compared with the traditional manual operation, the automation of electrical engineering saves a lot of manpower and capital costs. More importantly, it avoids the unqualified engineering quality and safety accidents caused by human beings. After the automation of electrical engineering is adopted, it can liberate more Manpower enables more funds to be invested in engineering construction. At the same time, unmanned control can monitor various data of electrical equipment for 24 hours. The operation process is also simplified, which greatly improves productivity and production efficiency. improve.

2.2 Control is more convenient

After adopting intelligent control of electrical engineering, the control of engineering equipment will be more convenient. This is an advantage of intelligence. The main control is reflected in the fall time, response time, robustness changes, etc. The equipment performs some control, which greatly improves the working efficiency of the equipment. After the application of intelligence, it also has a

certain basic guarantee for the automatic control system. ^[1] After investigation, it is found that the application of intelligence in electrical control engineering can control equipment more conveniently, and it is also in line with the application in actual operation. On the other hand, the intelligent of electrical automatic control engineering can also be remotely controlled and manipulated. The control can be carried out by adjusting data, which also saves the problem of manpower operating equipment to a certain extent, and makes the equipment unmanned into intelligent the era will play a certain role in promoting the intelligent technology of electrical automatic engineering in the future.

2.3 Intelligent application

Intelligent electrical engineering is based on electrical automatic control engineering, using current science and technology to implement the automation of electrical equipment and realize the intelligent of electrical engineering. With the development of science and technology, intelligence has been applied to electrical engineering. It is the general trend. At the same time, with the continuous upgrading of technology and the continuous transformation of equipment, it has a certain meaning for the promotion of intelligence in the future. In the process of electrical use, the advantages of intelligence are prominent in the following aspects. First of all, compared with manpower, intelligent operation is more accurate. On the one hand, it saves labor costs, on the other hand, it improves work efficiency, and on the other hand, the switch of electrical materials is more accurate. The third is also very important, that is, safety can be guaranteed to avoid safety accidents caused by human error and human technical level problems. For electrical engineering, automation and safety are both very important, And the introduction of intelligent technology exactly meets the needs of electrical engineering, avoiding many uncertain factors, thereby affecting the quality of the project. Electrical control engineering and intelligent technical means are applied to monitoring equipment, which can check some hidden safety hazards in time, and minimize the loss during electrical transportation.

3. Application of Intelligent Technology in Electrical Automatic Control Engineering

3.1 Application in automatic control

In electrical engineering, the most prominent point of the application of intelligent technology is to automate the engineering, and finally realize the operation quality and efficiency of electrical engineering. It is manifested in the following aspects, one is to improve the level of control, and the other is to improve the working efficiency of the equipment, the third is the more accurate maintenance of the equipment, and the fourth is the safety to avoid accidents. Intelligent applications are based on the application of GPS positioning. This technology can troubleshoot the running equipment in the system, and perform timely troubleshooting through positioning, and finally achieve maintenance and overhaul, and normal electrical Run provides help.

3.2 Fault diagnosis

During the use of equipment, failures are unavoidable, but before the equipment fails, there will be certain signs. It is difficult to find and diagnose only manually, and intelligence can be used for some signs. Carry out an early warning. When a sign occurs, it will be fed back to the intelligent system as soon as possible, and the intelligent system will diagnose and investigate through intelligent technical means. At the same time, intelligent technology can also detect abnormalities in the equipment in advance. After the diagnosis, through data comparison, accurate diagnosis can be made, and finally eliminated. The maintenance and maintenance of electrical equipment can ensure the working efficiency and engineering quality of the equipment, and at the same time reduce the probability of equipment failure. However, it is found during work that the phenomenon of failure probability cannot be completely avoided, especially It is that traditional technical means cannot do thorough maintenance and inspection to a certain extent. This requires the introduction of intelligent technology to diagnose and troubleshoot faults. For example, when diagnosing a transformer, the composition of the gas is first diagnosed, and then analyzed. Diagnose the cause of the failure and finally determine the location of the failure. Compared with the traditional detection, both work

efficiency and work quality have been improved. At the same time, it also improves the economic benefits of the project and saves a lot of manual inspections. Waste of human resources. At present, in the intelligent application of transformers, as well as in some other equipment, the application of intelligent technology has become more and more common, which is of great help in solving problems in electrical engineering.

3.3 Achieved automatic control

After the automatic control is adopted, it is avoided that some personnel arrive at the scene, directly control the equipment in the equipment control room, put the control system in the open mode, and implement a remote control. This has two advantages. One is to save manpower. Cost, the second is to reduce the economic burden. After the implementation of automatic control of the equipment, a certain effect has been achieved to a certain extent, and all the controls can be carried out autonomously.

3.4 Expansion of intelligent applications

For electrical engineering, intelligence is a trend of future development. At present, my country's urban and rural economy is developing relatively fast, but it is rarely used in electrical automation. There are still many traditional electrical engineering operations. The application of intelligent technology of China is still at the theoretical stage and has not been well applied. The coverage rate is still very high. It is facing a series of problems in technological transformation. If you want to change this status quo, you have to do the following points. Conduct electrical intelligence training for relevant technical personnel, or introduce a group of professionals to transform electrical intelligence applications from theory to practical application. The second is to update the traditional equipment in order to meet the application of equipment intelligence, which can reduce the input of labor costs, and at the same time increase the service life of the equipment, so that the working efficiency of the equipment can be improved, and the subsequent equipment management is also effective. To a role. When electrical equipment fails, it will have many impacts on people's lives. The use of intelligent technology for detection can greatly alleviate the probability of failure. Intelligent technical means can carry out data statistics and analysis, and for some areas that are extremely prone to failure, more prevention mechanisms can be set up to achieve key monitoring and management. Only by vigorously developing the intelligent of urban and rural electrical control projects can it help the development of urban and rural economy and make the construction of urban and rural integration more in line with the needs of social construction.

4. Conclusion

The advantages of intelligent technology in electrical automatic control engineering are mainly reflected in three aspects. The first is unmanned control, which saves a lot of labor costs. The second is that it will be more convenient to adjust and control and improve work efficiency. The third is that intelligent applications can prevent in advance and reduce the probability of failure. In specific applications, an automatic control can be carried out, and the positioning function can be used to control the equipment. Monitoring and maintenance will be more accurate, and related fault diagnosis will be timelier. The fault location can be eliminated more quickly. Using intelligent technology, remote control can be achieved, which greatly reduces the occurrence of safety accidents. At the same time, it also improves work efficiency. In the process of urban-rural integration, the application of intelligent technology in electrical is still at the theoretical stage. It is necessary to promptly introduce relevant talents and intensify personnel training, so as to contribute to the development of society and the people. Provide help for a high-quality life.

References

[1] Yu Lei. Application analysis of intelligent technology in electrical automation control engineering[J]. Architectural Engineering Technology and Design, no.033, pp.3893, 2018.