

Application of Electrical Automation Technology in Power System

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Abstract: With the fast progress of socialist market economy, China's modernization has made remarkable achievements, but the development of modernization is inseparable from the power industry. Therefore, the power industry is developing rapidly. With the rapid progress of science and technology, the masses of the society put forward more stringent requirements for the power system. In the development of electric power enterprises, it is a must to make scientific use of automation technology. According to the specific development of the power industry, this paper analyzes the advantages of electrical automation technology in the power system, puts forward the specific application of electrical automation technology in the power system, and formulates the improvement measures for the application of electrical automation technology.

1. Introduction

With the fast progress of economy, in people's production and living activities, the demand for electricity continues to increase. The power system is difficult to meet people's needs through traditional technology. Through the application of the advanced technology of electrical automation in the power system, the safe operation of the power system can be guaranteed, and its stable performance can be strengthened.

2. Advantages of Electrical Automation Technology in Power System

Applying electrical automation technology in power system can guarantee the safety performance of operation activities, which is conducive to the smooth completion of operation activities. Using electrical automation technology can also carry out remote substation maintenance activities. Using the substation, we can understand the specific operation of the power system, carry out the relevant control work, quickly obtain the data content associated with the power system, which is helpful for the staff to carry out the research activities of power system operation, and improve the stability of power system transmission activities. To ensure the stability and safety of power system operation, we need to attach great importance to advanced science and technology^[1]. In the power system, using electrical automation technology can effectively promote the development of information processing work, promote the processing efficiency, quickly find out the existing faults, and make targeted improvement plans, so as to properly deal with the fault problems.

3. Application of Electrical Automation Technology in Power System

3.1 Application of Computer Technology

As there are many components in the power system, we should base on a diversified perspective to carry out the application activities of power automation technology. To ensure the completion of distribution and transportation activities, substation plays a significant role. In the operation of substation, the pre-programmed control is the main form of control mode, which can improve the scientificity of power transmission activities. On this basis, through the development of substation control unit automation control upgrading activities, the substation efficiency can be significantly

improved. After the upgrade activities, the optical cable will replace the signal optical cable, promoting the control activities to develop towards a more networked direction. Using substation automation control upgrade can supervise and control the operation of the substation anytime and anywhere, which is conducive to the efficient completion of the substation work.

3.2 PLC Technology

PLC technology is one of the electrical automation technologies. Using this technology can carry out programming activities. In the power system, PLC technology can improve the accuracy of all parts of the whole system. In the process of carrying out the relevant sorting, storage and calculation activities, the use of PLC technology can strengthen the scientificity and accuracy of the work, and promote the smooth completion of flexible and intelligent operation and other activities. In the power system, PLC control technology can effectively manage and control the working procedures, ensure the completion of independent control of module information, and improve the efficiency and quality of power system control.

3.3 Simulation Technology

In the progress of electrical automation technology, the progress of simulation technology plays a significant role. In the operation of the power system, the use of simulation technology can strengthen the defense capability of the power system and help the power system resist the interference caused by external factors. In the construction of power industry, the development of power system operation activities is closely related to simulation technology. Through simulation technology, power system management staff can evaluate the overall operation level of the system based on it. In the power system, the generated data not only has many types, but also has a large number. Using simulation technology can ensure the smooth completion of data and information processing activities, and improve the processing efficiency and quality. Based on the relevant experimental results, scientific data information can also be provided to the system maintenance work, so that the staff can fully understand the overall situation of the operation, enhance the control efficiency of the system. Using simulation technology, the resource consumption can be reduced significantly^[2].

3.4 Power Grid Technology

The rapid progress of the power industry is inseparable from advanced technology, and the power grid technology is one of them. The power grid technology belongs to the category of integrated dispatching technology, has a relatively high rationality, occupies a crucial position in the electrical automation technology. In the process of power system operation activities, the use of power grid technology can strengthen the power system data processing ability, and promote the power system operation control level to develop towards a more intelligent direction. The application of power grid technology in the power system can also play a good role in regulating the operation activities and promote the overall operation level. With the fast progress of electrical automation technology, power grid technology will be applied in more fields, and its influence will be greater and greater.

4. Improvement Measures for Application of Electrical Automation Technology

4.1 Strengthen the Application Standard of Electrical Automation Technology

In China's power system, electrical automation technology has a very wide range of applications. However, on the specific application of electrical automation technology, most enterprises and units are still in the primary stage, so there will be some problems in the operation activities. Therefore, in order to strengthen the application of electrical automation technology in power system, the relevant departments should scientifically improve the application standard of electrical automation technology according to the specific situation. In the use of electrical automation technology activities, in order to promote the use of quality, in view of the current production standards and research and development technology, we can vigorously carry out relevant sound activities to

promote the use of electrical automation technology in a wider range. In terms of electrification automation technology, we can further strengthen the resource sharing activities between enterprises, ensure that all enterprises can carry out in-depth communication activities, and promote the application level of electrical automation technology through the joint efforts of both sides.

4.2 Improve the Level of Automation Technology

At this stage, on the operation of the power system, there are still some defects and deficiencies in the use of electrical automation technology in the power grid deployment work, so it is urgent to develop the relevant sound activities. Therefore, to promote the work efficiency of electrical automation technology, for the power grid technology, the relevant technical personnel should further carry out relevant analysis activities to improve the operation efficiency of power grid automation. While carrying out the specific work, based on the specific situation of the current power grid operation, the relevant technical personnel should carry out in-depth research activities, and formulate relevant improvement measures based on the analysis results. In the specific rectification plan, we should also make full use of electrical automation technology to continuously improve the rationality of power grid dispatching and enhance its intelligent degree. In terms of power grid automation technology, relevant technical personnel should pay more attention to it and vigorously carry out relevant research activities to promote the better development of power grid automation technology. On the application of network technology, technical personnel should continue to expand the scope of application, use the network data calculation activities to promote the quality of power grid technology.

4.3 Unify Electrical Automation Technology

In the power system, to improve the stability of electrical automation technology, we can carry out unified processing activities for all aspects, such as technical safety, technical control and so on. While carrying out operation activities in traditional power system, different departments need to carry out different work, mainly using the form of manual management. It affects the development of system operation activities to a great extent, and is not conducive to the improvement of management quality^[3]. Whether it is system maintenance, co-ordination, or distribution and safety work, using electrical automation technology can carry out processing activities, which can significantly improve the quality and effect of power system management. In the operation of the power system, the problem of power failure is more common. In order to determine the location and cause of the problem, the maintenance staff often spend a long time, and it is difficult to achieve the ideal effect. Applying electrical automation technology in the power system can focus on the power system to carry out processing activities. Once a system failure occurs, the fault location can be determined in a short time. On this basis, the relevant analysis activities can also be used to make clear the cause of the failure, and relevant treatment measures can be taken to ensure that the problem can be solved quickly, so as to save more time and strengthen the management efficiency and quality.

5. Conclusion

With the rapid progress of Internet, science and technology, the update speed of electronic equipment is very fast, making people's life more convenient^[4]. Part of the electronic technology has been widely used in various fields, and has made important contributions to the development of various industries. In the power industry, to ensure the normal life of the majority of residents, we should attach great importance to the stability of the power system. The power system should keep pace with the development of the times, and constantly expand the application scope of automation technology, so as to promote the management quality of power system.

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