Research on Dispatching Automation and Development Direction of Power System

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Abstract. In recent years, the overall development momentum of automation technology is relatively good, which has been widely concerned and paid attention to by people. Its application in power system scheduling has a very important impact on the efficiency improvement of power system in the operation process. However, there are still many problems in the implementation of power system dispatching automation. In this paper, the existing faults are analyzed. Combined with the actual situation, it will propose targeted treatment measures to provide guarantee for the safety and stability of power system during operation.

Keywords: Power System, Scheduling Automation, Existing Faults, Treatment Measures

Under the background of rapid social and economic development, people's daily life quality and level are constantly improving and the overall demand for electric power resources is constantly increasing. In the daily operation and development process of electric power enterprises and in order to fundamentally meet people's personalized needs and improve their economic benefits, electric power enterprises should ensure the safety and stability of the power system in the operation process. In the normal operation of the power system, it is generally scientific and reasonable to use the automation technology, which can not only achieve automatic scheduling but also meet people's personalized demand for power resources. However, when the power system realizes dispatching automation, it will affect the security and stability of the power system.

1. Fault analysis on dispatching automation of power system

In fact, the realization of power system dispatching automation mainly refers to the realization of real-time and effective monitoring and management of power grid through scientific and reasonable utilization of computer technology [1, 2]. The system is mainly composed of different types of automatic monitoring system, software and hardware in the power system. Although the implementation of power system scheduling automation has a very important impact on the efficiency improvement of the power system in the operation process, there are still faults in many links during the operation. The failure of power system dispatching automation will not only directly affect the effect of dispatching operation but also seriously threaten the security and stability of power system.
during operation. Therefore, in this context, only by combining the actual situation and analyzing the current fault problems existing in the power system dispatching automation can the targeted treatment measures be proposed [3].

Through the analysis of power system dispatching automation fault, it is found that the current common fault types are mainly divided into three aspects: firstly, the first kind is the main station fault. When this type of failure occurs, it is basically in the server or the front machine, etc. Once the failure occurs in the application, in order to deal with these failures, we can directly reassemble and install the program, at the same time, actively take targeted measures to achieve a scientific and reasonable setting of the database. In this way, we can establish a good link directly to the data source and we can also restore the data. The main station faults can be divided into many different types, such as network faults, etc. The consequences caused by different fault types are obviously different. Only after combining with the actual situation can targeted solutions be put forward to reduce the impact of these faults on the power system as far as possible.

The second kind of faults is channel failure. In the power supply process, in order to ensure the efficiency and quality of power supply, many electric power enterprises usually take targeted measures to ensure the good state of the power system during operation. However, in the specific operation process, many power supply units still choose to use single channel or false double channel when the new channel of substation and dispatching terminal is effectively connected. When using these two operating modes for specific operations, the system in the channel link will appear unusually weak. In this context, if the channel fails, it will be difficult to recover in a very short time frame, resulting in an inability to achieve effective control over the dispatcher side. In addition, there is a more common fault is the fault of sub-station equipment, which can also be called RTU fault. In the specific application process of automation technology, specific measures should be taken based on the actual situation to promote the good combination of monitoring, communication and other templates. One thing to note is that each template in these assembly sections will have a corresponding line, which will need to be operated by the corresponding indicator light. In this way, the fault type can be directly determined by the indicator light.

2. Measures to deal with the fault of power dispatching automation

2.1. Perfect the communication system of power dispatching

In the daily operation and development process of electric power enterprises, the fundamental purpose is to ensure the safety and stability of the power system in the operation process, so that electric power enterprises can obtain the corresponding economic benefits. In the process of operation, the automatic power transfer system will still be affected by many factors, leading to many problems of its own, which will also lead to serious failures. When dealing with these faults, we should pay more attention to the dispatching communication system of power system according to the actual situation. In this way, not only accurate and effective data can be provided for the operation of power dispatching automation, but also the communication of power dispatching system can be effectively played. For example, after combining with the actual situation, it is found that in the operation and management process of a power enterprise, it can promote the level and quality of dispatching automation communication and transmission technology of power system in the actual application process. In practice, the mode of light communication is vigorously promoted and the fundamental purpose of this is to play a good role in maintaining the dispatching automation running state of the power system and to provide guarantee for the security and stability of the system in the running process.

In this context, it should be combined with the specific requirements of power system dispatching automation in the operation process, especially the personalized requirements for communication and transmission data, which help construct the optical fiber communication channel meeting the actual requirements. Through the channel in the practice of scientific and reasonable use, fundamentally promoting the power system scheduling automation can be realized, and on this basis, the optical fiber communication can also be realized. At the same time, after combining with the actual situation, it is
found that in the implementation of broadcast communication mode, it can also play a good role in the power dispatching communication system. Through scientific and reasonable construction and utilization of light wave communication mode in practice, it can not only eliminate some electromagnetic interference in power dispatching automation, but also provide effective guarantee for the implementation effect of power dispatching automation. In addition, the scientific and reasonable use of optical fiber communication technology can not only promote its effective prevention of communication interference signals, but also play a good role in eliminating some interference signals once found. The basic purpose of doing this is to meet the personalized requirements of power dispatching automation in the implementation process.

2.2. Select the appropriate screening method
In the running process of power system dispatching automation system, many faults exist because of the influence of many factors. In order to ensure the safety and stability of the system in the operation process, it is necessary to take targeted measures based on the actual situation, which can ensure that the fault can be effectively alleviated and handled to the maximum extent. In view of various types of fault troubleshooting, we should try to choose the method in line with the actual requirements, so as to achieve the troubleshooting. If the dispatching fault of the power system occurs in the early stage, it can realize the in-depth observation and analysis of various types of instruments in the operation process of the power dispatching system through the rational use of the observation method. In this way, it can not only check the status of its operation, but also observe the status of the instrument indicator light in the use process according to the actual situation. After the combination of these information, various types of faults can be scientifically and reasonably judged. The fundamental purpose of this is to provide some reliable and effective data as support for fault treatment. In addition, when dealing with some running faults with complex characteristics, the fault should be eliminated in the process of fault inspection through the rational use of the elimination method. On this basis, professionals can analyze these fault problems and put forward targeted treatment measures, which can eventually ensure the safety and stability of the system in the operation process.

3. Conclusion
During the operation of power system dispatching automation, many fault types often occur. Once the fault occurs, it will not only directly affect the efficiency of the system during the operation, but also threaten the safety and stability of the system at the same time. Therefore, it is necessary to improve and optimize the existing power dispatching communication system in practice and at the same time select the fault detection method that meets the actual requirements, which can effectively deal with the fault.

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