Analysis and Practice of Distribution Operation and Maintenance Integration with the Aim of Improving Lean Management

Junpeng Zhu\textsuperscript{a,*}, Xinyuan Ge, Rui Xie, Zheng Sun, Xincheng Zheng
Baiyun Power Supply Bureau, Guangzhou Power Supply Co. Ltd, GuangZhou, 510410, China
\textsuperscript{a} 18121079156@163.com
*corresponding author

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Abstract: In power system, distribution line and related equipment are important components of power system and play an extremely important role in power system. To ensure the normal operation of power system, it is necessary to strengthen the management of distribution lines and related equipment. In the environment of market-oriented development of distribution lines and equipment, the operation and maintenance work of distribution becomes more and more complicated. In order to improve the quality of management and realize lean management, it is imperative to promote the integrated development of distribution operation and maintenance. This paper aims at improving lean management, carries on the thorough research and analysis to the distribution operation and maintenance integration, and puts forward the scientific and reasonable suggestion on the basis of practice, in order to promote the deepening development of distribution integration in our country, play an important role in promoting the use.

1. The Significance of Integrated Construction of Distribution Operation and Maintenance Aiming at Improving Lean Management

Lean management is a management method developed from lean production, and it is also a philosophy of management. With the continuous development of social economy in China, the concept of lean management has been widely popularized and widely used in enterprise management. Up to now, lean management is no longer limited to the management level, but also a strategic concept of development and construction, which plays an extremely important guiding role in the development and construction of enterprises. In recent years, the level of our national economy has been continuously improved, the socialist market economy system has been constantly improved, and the economic environment has become more and more prosperous. Meanwhile, demand for electricity is growing. Therefore, in order to meet the requirements of social and economic development and construction, China is constantly increasing the construction of the power industry, in which to promote the integrated development of distribution operation and maintenance in the power system, to achieve lean management, is one of the key contents of power construction in China. By realizing lean management, it can effectively improve the satisfaction of power users, reduce the production cost of power energy, optimize the production process, and expand the economic and social benefits of power enterprises. It can be seen that in the modern social and economic environment, promoting the integrated development of distribution operation and maintenance and realizing lean management are the inevitable requirements of modern social and economic development for the construction of electric power industry, at the same time, it is also an inevitable development trend to promote the continuous development and progress of electric power industry and improve the level of modernization construction.

In the process of power system operation, the management of distribution network will directly affect the operation quality of power system, and then affect the quality of power supply service, resulting in the power users can not use power energy normally, which will not only affect the user's experience of electricity use, but also have a very negative impact on social and economic development and construction. Therefore, in the key period of building socialist market economy in
our country, in order to effectively improve people's quality of life, strengthen the construction of national economy and realize the great rejuvenation of the Chinese nation, we must carry out effective reform and innovation of the traditional distribution network management mode and implement the lean management mode which is more in line with the requirements of modern social and economic environment. At the same time, in order to improve the effect of lean management, we can effectively reform and innovate the operation and maintenance of distribution, promote its integrated development, so as to effectively enhance the effect of lean management, and play a positive role in promoting the intelligent, large-scale and complex development of distribution network.(See figure 1)

![Figure 1 Integrated modern distribution operation and maintenance facilities](image)

2. A Brief Analysis of the Integrated Concept of Distribution Operation and Maintenance Aimed at Improving Lean Management

2.1. Connotation of Integrated Concept of Distribution Operation and Maintenance Aiming at Improving Lean Management

In order to improve the effect of lean management effectively, it is necessary to promote the integrated development of distribution operation and maintenance. In the process of promoting the integrated development of distribution operation and maintenance, we must fully understand the connotation of the integrated concept of distribution operation and maintenance. The integrated development mode of distribution operation and maintenance is the inevitable result of the development of the times. It is a kind of organic combination with the organization mode of living and working under the current economic environment. At the same time, the work content is optimized and integrated. The integrated mode of distribution operation and maintenance can effectively optimize the distribution field operation, equipment inspection, maintenance and repair work, so that the distribution operation and maintenance effect can be significantly improved, but also can achieve a good effect of saving resources and reducing energy consumption, which is also very important to the construction of sustainable development social economy in China.

2.2. Main Principles of Integrated Construction of Distribution Operation and Maintenance With the Aim of Improving Lean Management

In order to improve lean management effectively, in the process of promoting the integration of distribution operation and maintenance, we must pay attention to the main principles of integrated construction of distribution operation and maintenance, which has an extremely important impact on the effect of integrated construction of distribution operation and maintenance and the quality of lean management. To ensure the safe implementation of the integrated development mode of distribution operation and maintenance, we must always put safety in the first place, always adhere to the principle of safety, at the same time, according to the requirements of the principle of gradual progress, steadily promote the effective implementation of the integrated mode of distribution operation and maintenance.

In accordance with the principle of safety and step by step to promote the integration of
distribution operation and maintenance, in a short period of time may not have a more obvious effect, but in a long period of time to adhere to, will inevitably receive great gains. Therefore, in the process of implementing the integration of distribution operation and maintenance, we must be patient and can not rush forward. At the same time, we should pay attention to the implementation of the integrated mode of distribution operation and maintenance, carry out scientific and reasonable guidance, construct a perfect incentive and guarantee mechanism, strengthen professional skills, so as to effectively implement lean management and significantly improve the effect of lean management. (see figure 2)

Figure 2 Integrated distribution operations analysis being conducted by staff

3. The Main Measures of Integrated Construction of Distribution Operation and Maintenance Aiming at Improving Lean Management

In order to improve lean management, it is necessary to make overall planning of manpower, capital, technology and other resources, so as to build the best integrated structure of distribution operation and maintenance. This can not only effectively improve the implementation of distribution operation and maintenance integration, reduce practical obstacles, but also significantly reduce the cost of implementation of distribution operation and maintenance integration, stimulate the enthusiasm of staff, make them fully play a subjective role in the work process, and play a positive role in improving distribution operation and maintenance efficiency. In addition, through the overall optimization configuration, it can also effectively improve the safety of distribution network and ensure its stable and reliable operation, which can not only improve the quality of power supply and distribution service, but also play an extremely important role in improving the lean management effect.

3.1. Strengthening the Integrated System of Distribution Operation and Maintenance Based on Lean Management

In the process of implementing the integration of distribution operation and maintenance with the aim of improving lean management, we must take lean management as the foundation and perfect the integrated construction system of distribution operation and maintenance. It should be noted that in the process of imposing the integrated system of distribution operation and maintenance, the requirements of relevant national laws and regulations must be fully considered, so as to effectively ensure the implementation of the integrated system of distribution operation and maintenance. In addition, in the process of formulating the integrated system of distribution operation and maintenance, it is necessary to grasp the contents of the system as a whole, to explore and interpret the various project categories and related standards of distribution network operation and maintenance in depth, so as to classify them scientifically and reasonably, and to play an active role in formulating a perfect integrated system of distribution operation and maintenance.

3.2. Enhanced Integration of Integrated Resources for Distribution Operations and Maintenance Based on Lean Management
The integration of distribution operation and maintenance with the aim of improving lean management needs to use a lot of resources in the construction process, and how to allocate and apply the resources will have a profound impact on the construction effect of the integration of distribution operation and maintenance, and will also affect the degree of resource consumption. Under the guidance of the concept of sustainable development, we must optimize and integrate resources, implement "grid" management of distribution network, and build a comprehensive operation and maintenance management team, so as to effectively optimize the quality of integrated construction of distribution operation and maintenance. In the process of implementing the integration of distribution operation and maintenance, it can also effectively improve the efficiency of resource utilization and effectively achieve the effect of saving resources. In addition, through the optimization and integration of resources, it also plays an extremely important role in promoting the efficiency of team management, and is an important measure to promote the coordinated development of various parts, realize the operation of collectivization, and improve the effect of integrated operation of distribution operation and maintenance.

3.3. Strengthening the Integrated Multi-Mode Innovation and Development of Distribution Operation and Maintenance Based on Lean Management

In order to improve the integration of distribution operation and maintenance with lean management, we must pay attention to the application of diversified operation and maintenance mode and promote the effective realization of distribution operation and maintenance integration through innovation. In the process of implementing the integration of distribution operation and maintenance, it is necessary to carry out the combination development of multi-point mutual training and one-to-one guidance interaction according to the actual situation, so as to effectively innovate the mode of distribution operation and maintenance integration, promote the operation and maintenance personnel to master more skills, and play an active role in improving lean management. In addition, in order to effectively implement the integration of distribution operation and maintenance, it is necessary to strengthen specialized training for key technologies, promote technological innovation and breakthrough, constantly improve the technical level, and play an active role in optimizing the effect of lean management and deepening the integration of distribution operation and maintenance.(See figure 3)

4. Concluding Remarks

Under the guidance of improving lean management, the integration of distribution operation and maintenance can play an important role in strengthening the development and construction of power
system and optimizing the quality of power supply and distribution service. At present, the social economy of our country is in the stage of rapid development, and the demand for electric energy will also increase greatly in this stage. Based on this realistic environment, it is necessary to actively promote the integrated development of distribution operation and maintenance in the power system, carry out effective reform and innovation to the traditional management mode, and implement lean management, so as to effectively improve the operation quality and service ability of the power system, which plays an extremely important basic guarantee role in the construction of social and economic development and the effective improvement of people's quality of life at the present stage.

References

