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Research on the Method of Improving the Quality Control of Power Grid Materials

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Abstract: Under the current situation, in order to ensure the effective improvement of the quality control and management efficiency of power grid materials, power enterprises need to change the original management mode, pay more attention to quality control, strengthen supervision, establish and improve the quality control system of power grid materials, so as to promote the stable development and efficient operation of power enterprises. This paper studies and analyzes the methods of improving the quality control of power grid materials.

Keywords: Power Grid Materials; Quality Control; Improvement Method

1. Introduction

In order to ensure the smooth implementation of the quality control of power grid materials, power enterprises need to unify and standardize technical standards, strictly control the authenticity and accuracy of material data in the bidding process, and train relevant quality control technicians of enterprises to establish a talent database. At the same time, electric power enterprises need to conduct unified and standardized handling of on-site storage of materials and early installation and commissioning of equipment, and provide special quality control personnel to integrate quality control into the whole life cycle of power grid construction. Finally, power enterprises need to formulate scientific and reasonable sampling key parameter indicators, and constantly optimize the sampling method, so as to improve the quality control quality and make power enterprises move towards sustainable development.

2. Current status of power grid material quality control

The quality control of power grid materials usually requires product testing, equipment supervision, arrival sampling, special sampling, and material defect treatment to complete the quality control process. For the equipment and materials used in the power grid production process, power enterprises need to complete the verification of materials in accordance with national regulations, industry standards and internal agreements of the company, so as to ensure that the quality of materials can meet the use standards.

At present, in order to ensure the quality of power grid materials, electric power enterprises need to strictly test products, monitor equipment in real time, check the resources that have arrived, and carry out special spot checks on goods in strict accordance with standards to strictly control defects in the production process. To be specific, product testing refers to that power enterprises need to conduct random inspection on relevant products and resources provided by suppliers to control the quality of goods. Only products that meet the standards can be put into practical application. Equipment supervision refers to that professionals of electric power enterprises need to formulate scientific and reasonable testing standards in strict accordance with the contract and design scheme, and conduct scientific and reasonable tracking and testing of combined electrical appliances, transformers and other equipment used in the power grid production process through the "WHS testing method" to ensure the stable operation of products and equipment. Arrival inspection refers to the sampling inspection of materials and resources provided by suppliers by power enterprises to ensure that the materials meet the use standards, so as to ensure the stability and reliability of power production. Special spot check refers to that, in addition to the fixed inspection of goods and equipment,

power enterprises should conduct special spot checks on the links that are prone to quality problems in the power production process and related equipment and materials. Defect management refers to the quality control of materials used in the production process. Power enterprises need to register, feed back and record materials in strict accordance with the operation process to ensure that materials can be traced quickly when problems occur, so that suppliers are required to rectify and deal with them in a timely manner to minimize the loss in the power production process.

3. Problems in quality control of power grid materials

3.1 Technical standard issues

At present, the difficulty in quality control of power grid materials in China is that there is no perfect technical standard. The materials, processes and equipment used in the power production process are not standardized. At the same time, the relevant technical standards in the quality control process are not clear, leading to the lack of unified and standardized control of the materials produced by suppliers, and the difference in product quality, which makes the quality control of power grid materials more difficult.

3.2 Bidding procurement issues

The quality of materials determines whether the power grid production process is reliable and stable, and the quality of materials is determined by the supplier. Therefore, in order to ensure the quality of materials, power enterprises need to strictly control the bidding process, control the supplier's sales of materials, and ensure the authenticity and reliability of the relevant data of materials in the bidding process. If the supplier's material parameters used for bidding are not accurate, the quality of material bidding will not meet the production requirements, which will have a serious impact on the subsequent power production.

3.3 Monitoring issues

Due to the large number of front-line personnel and management personnel in the production process of China's power enterprises, the lack of excellent professional skills of relevant technicians, and the imperfect construction control system in China, most power enterprises lack experience in construction work and quality control, leading to the failure to establish a sound and complete construction system in China.

3.4 On site storage, installation and commissioning problems

In the actual construction process of the power grid, most electric power enterprises did not properly preserve materials and did not conduct early installation and commissioning of equipment, which led to serious problems in the subsequent production process. For example, due to the imperfect moisture-proof and cold proof work and the supplier's failure to provide a unified and standardized installation and commissioning method, the equipment cannot be used or the materials cannot meet the use standards in the later power construction process, which seriously affects the quality of power grid construction.

4. Importance of power grid material quality control

The quality of power grid materials determines the operation efficiency of the power grid system. Therefore, power grid enterprises need to pay more attention to the quality control of power grid materials, so as to ensure that power enterprises play an important role in the fierce market environment. Specifically, the quality control of the power grid can improve the work efficiency of enterprises, help enterprises establish a good image, and ensure the stability and reliability of the power grid system. At the same time, the quality control of power grid materials determines the management level of power enterprises. The improvement of the quality control level of materials can promote the improvement, optimization and improvement of the management system of power enterprises, thus improving the work efficiency of the entire enterprise. In addition, quality control can help electric power enterprises to standardize and unify the current management system and regulations more scientifically and reasonably, so as to ensure that electric power enterprises can obtain higher economic benefits. Finally, the innovation of the existing quality control model can help electric power enterprises to establish a new management system, and electric power enterprises can move towards sustainable development.

5. Suggestions and methods for improving the quality control of power grid materials

5.1 Improving quality management

In the process of controlling the quality of power grid materials, power enterprises need to clarify the importance of qual-

ity control, and achieve the purpose of quality control through scientific and reasonable control of suppliers, contracts, design schemes, and storage methods. Electric power enterprises need to formulate scientific and reasonable planning schemes for different links and elements, use top-level design for overall management, and constantly improve the quality of grid material quality control through comprehensive consideration from various aspects.

5.2 Planning related standards

In the process of controlling the quality of power grid materials, electric power enterprises need to formulate strict technical control standards, standardize the indicators for putting materials into use, and let suppliers produce materials in strict accordance with industry standards and enterprise requirements, so as to reduce the difficulty of quality control. At the same time, it can also solve the product differences caused by suppliers' misunderstanding and unclear material standards. In addition, power enterprises need to reasonably optimize and improve the quality control system, establish and improve the corresponding quality control system to ensure that the material quality can meet the industry requirements.

5.3 Putting quality control work through the whole life cycle of electric power materials

When conducting quality control, power enterprises need to involve quality control in all stages of power production, strictly control the whole life cycle of power production, quantify and standardize the relevant data of material production and application, in order to provide feedback and evaluation to suppliers in the later stage, and achieve closed-loop management of quality control.

5.4 Establishing material quality inspection database to realize resource sharing

In recent years, with the continuous development of science and technology in China, the material quality control of electric power enterprises has also begun to move towards the development path of digitalization and informatization. However, due to the low threshold of material production, the large size of suppliers, and the uneven production technology, there are differences in material quality. Therefore, electric power enterprises need to summarize the previous experience and results of spot check, combine the installation, operation and maintenance information of equipment in the process of power grid construction, continuously integrate and share the resources of power grid data, in order to establish a quality inspection database, ensure the smooth implementation of quality control, and improve the efficiency and rationality of quality control.

6. Conclusion

To sum up, in order to ensure the smooth implementation of quality control, power enterprises need to carry out unified and standardized management on the quality control of power grid materials, so as to improve the quality of materials, reduce the repair and maintenance costs in the later production process, and cultivate technical personnel for quality control for power enterprises to achieve lean and refined management of power grid construction.

The quality of materials determines the quality of power grid construction. Therefore, power enterprises need to pay more attention to the quality control of materials to avoid reducing the efficiency of power grid construction due to problems such as substandard materials and related equipment failures.

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