

Analysis of the safety culture construction of electric power information and communication enterprises

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Keywords: Power and Telecom; Safety Culture; Innovation; Construction

Abstract: For enterprises, safety management plays a decisive role not only in their long-term development but also in influencing the safety of people's lives and property. The construction of a safety culture is a crucial component of safety management and has a significant impact on the level of safety management. Only by creating a favorable safety culture can effective influence on employees be achieved, providing robust support and guarantee for the implementation of safety management regulations. However, many enterprises in China currently face various issues in the process of operating and managing their safety culture, necessitating reasonable measures for optimization. Based on this, this paper first briefly outlines the connotation of safety culture construction, analyzes the crucial role of safety culture construction in the power and communication (power and telecom) enterprise, then provides a detailed introduction to the steps of safety culture construction in power and telecom enterprises. Finally, it proposes several construction strategies, aiming to provide reference for the construction of safety culture in power and telecom enterprises.

1. Introduction

In recent years, with the continuous occurrence of safety accidents, the attention to enterprise safety management has been increasing. As an essential aspect of safety management, the construction of safety culture plays a decisive role in the quality of safety management. Therefore, one of the important tasks for enterprises in the production and operation process is to build a good safety culture. For power and telecom enterprises, their main production goal is to create a foundation platform for power companies through the effective use of information communication, achieving effective control and comprehensive dissemination of various production, marketing, and office automation messages, thereby providing stronger support and guarantee for the safe operation of the power grid. At the same time, the operation and management of power and telecom enterprises not only have the characteristics of large maintenance volume, numerous points, wide coverage, and long lines, but also face rapid technological updates and certain safety risks. Continuous learning is required to enhance their own mastery capabilities, especially the need for strong safety management capabilities and the establishment of correct safety management concepts through effective safety culture construction. However, some power and telecom enterprises currently have a relatively low emphasis on safety culture construction, leading to lagging safety culture development, which affects

the smooth progress of safety management. In this context, this paper analyzes the safety culture construction of power and telecom enterprises, proposes corresponding construction strategies, and contributes to the formation of a favorable safety culture atmosphere for these enterprises, thereby making a modest contribution to improving their safety management quality.

2. The Connotation of Safety Culture Construction

Safety culture construction refers to the measures taken by enterprises in the process of production and operation, such as the formulation of a series of safety standards, rules and regulations, and safety training, to create a safety-oriented corporate culture. This aims to promote the improvement of employee safety awareness, providing strong support and guarantee for the safety of both the enterprise and its employees.[1] For enterprises, safety culture mainly consists of safety system culture, safety material culture, safety spiritual culture, safety values, and behavior norms culture. When conducting safety culture construction, enterprises should follow principles such as combining strictness with gentleness, continuous and persistent efforts, people-oriented with full participation, highlighting characteristics, and focusing on practical effectiveness. Additionally, considering their actual situation, enterprises should establish sound and reasonable safety management mechanisms, clarify the responsibilities of management personnel at all levels, and ensure the standardized implementation of safety management. Regular organization of safety education and training, as well as safety risk assessments, should be carried out to continuously enhance employees' safety awareness and capabilities. This proactive approach aids in identifying potential safety risks during the production and operation processes, enabling effective responses and prevention to avoid safety accidents.[2] Furthermore, increasing the intensity of safety supervision through regular and irregular inspections, coupled with the establishment of corresponding reward and punishment mechanisms based on employee performance, helps in promptly identifying safety hazards, effectively restraining employees, and enhancing behavioral norms.

3. The Significant Role of Safety Culture Construction in Power and Telecommunication Enterprises

3.1. Contributes to the Improvement and Implementation of Safety Production Responsibility System

For enterprises, various work activities require relevant responsibilities and management systems as references and guidelines, and safety management is no exception. Similarly, in the production and operation processes of power and telecommunication enterprises, ensuring the stable operation of the power grid and avoiding safety accidents necessitate the establishment of comprehensive and reasonable responsibility and management systems.[3] However, many power and telecommunication enterprises often face the following problems in actual management: firstly, the safety management system is not perfect, and it fails to provide reliable references and guidance for safety management. Secondly, although relatively comprehensive work systems have been formulated, they may remain superficial or not be fully implemented, resulting in situations where rules are set but not followed, and the effectiveness of safety management and responsibility systems is not maximized. With the rapid development of the era and increasingly standardized enterprise management, power and telecommunication enterprises are gradually improving their management rules and regulations. Therefore, in recent years, the latter problem has become more common. System implementation fundamentally relies on a sense of responsibility, with the concept being the main responsibility. In other words, the concept determines whether safety management systems are effectively implemented. Proper safety culture construction can effectively address conceptual issues,

enhance employees' safety concepts, boost their career ambitions and sense of responsibility, and promote the comprehensive implementation of relevant systems.

3.2. Facilitates the Elimination of Safety Hazards and Implementation of Safety Operating Procedures

In real-life situations, many individuals exhibit habitual behaviors at work that do not comply with safety operating procedures, resulting in persistent safety hazards that are challenging to eliminate. In recent years, the power system in many regions has experienced information and communication-related incidents, causing economic losses and severe impacts.[4] Many of these incidents were triggered by operations violating safety operating procedures. Although many violators are aware that their actions are incorrect, they maintain a sense of luck and, combined with the lack of attention from those around them, continue these behaviors without correction until an incident occurs, leading to regret. The primary reason is that relevant personnel lack sufficient safety awareness, have formed bad behavior habits at work, and, due to a lack of safety culture, have not been corrected in a timely manner, allowing violations to persist. However, if power and telecommunication enterprises effectively carry out safety culture construction, they can deeply instill safety thinking and consciousness in employees' minds. Consequently, employees will naturally work according to safety operating regulations, strictly restrain themselves to protect the company's property, others, and themselves, effectively eliminating hidden dangers and violations.[5]

3.3. Contributes to Continuous Increase in Safety Investment

In the process of enterprise production and operation, safety investment also plays a decisive role in safety management. This is true for power and telecommunication enterprises. Insufficient safety investment can lead to defects in safety facilities, resulting in hidden safety hazards and eventually causing safety accidents. Implementing effective safety culture construction can instill strong safety awareness in the leadership and employees of the enterprise. All aspects of work will consider safety requirements, attaching great importance to safety assurance. A comprehensive examination of the surrounding safety environment will be conducted, analyzing the deficiencies in safety facilities. Attention will be paid to the effectiveness of safety facilities, leading to a continuous increase in safety investment. Enterprises will continuously update and optimize their safety equipment, ensuring the efficient implementation of safety work.

4. Steps for Safety Culture Construction in Power and Telecommunication Enterprises

4.1. Establishment of Institutions

The leadership institution is a crucial guarantee for the organization to carry out safety culture construction. Only by establishing the corresponding leadership institution and setting up relevant executive bodies can reasonable safety culture construction plans be formulated. This approach drives the smooth progress of various tasks. Therefore, when initiating safety culture construction, power and telecommunication enterprises need senior management to fully recognize the significant role of safety culture construction. They should actively organize the establishment of leadership structures such as safety culture construction leadership groups to effectively drive grassroots employees. This ensures effective restraint on employees and integrates the resources owned by the enterprise. Efficient coordination and scheduling of various tasks promote the improvement of the enterprise's safety management level.[6]

4.2. Formulation of Plans

When undertaking safety culture construction, power and telecommunication enterprises should formulate comprehensive plans based on their actual situation. These plans serve as references for various tasks and require thorough monitoring of their execution and implementation. In the process of planning, a detailed investigation and analysis of safety culture-related content should be conducted. Combining the requirements of data security, enterprises should define their safety culture principles. Subsequently, a reasonable timetable should be established, regular inspections conducted, and checks on implementation efficiency and quality ensured. Additionally, during the formulation of safety culture construction plans, power and telecommunication enterprises need to stay updated, recognizing that information and communication technology is continually advancing. This progress may introduce more variable and complex safety risks. It is essential to adopt a correct innovative mindset, continuously introduce new management concepts and techniques, and promptly revise safety culture construction plans. This helps avoid obsolescence, aligning them more closely with the demands of the era and providing reliable references for subsequent work.

4.3. Training of Core Personnel

High-quality talents form the essential foundation for the progress of any work, and safety culture construction is no exception. For power and telecommunication enterprises, cultivating a team of core elite personnel with in-depth understanding and profound experience in safety culture construction is essential. This team can effectively implement relevant decisions, lead other employees effectively, identify current deficiencies in safety culture, propose reasonable optimization suggestions, and promote continuous improvement of safety culture. Therefore, when undertaking safety culture construction, leaders of power and telecommunication enterprises should prioritize the training of core personnel. Recognizing that the more core personnel there are, the greater the promotion effect on safety culture construction. In the process of core personnel training, leadership should enhance its own learning, become a role model, exert exemplary leadership, influence more employees, and then proceed to train other employees. Ensuring the comprehensive nature of training content, balancing theory and practice, helps in cultivating a larger number of high-quality core personnel, providing ample talent support for safety culture construction.

4.4. Propagation and Education

When power and telecommunication enterprises engage in safety culture construction, they can use various means such as publicity, incentives, education, and persuasion. Utilizing cultural models such as publicity, incentives, technological innovation, literature and art, and education and training helps gradually deepen safety culture construction. However, to achieve the desired construction goals and foster a favorable internal safety culture atmosphere, the following points should be addressed: Firstly, during the process of propaganda and education, accurate and comprehensive communication of important directives from higher authorities regarding different aspects is crucial. Particularly, effective communication on data security requirements, deep understanding of the ideological connotations, and guidance for employees to fully recognize the importance of data security protection should be emphasized. Secondly, active organization of activities such as "Safety Month," "Safety Technology Learning," and "Safety Hazard Inspection" is vital. A combination of online and offline methods, including playing videos, animations, and performances, can be employed for safety culture propaganda. This creates a more immersive safety culture construction atmosphere. Thirdly, strict adherence to the principle of addressing every issue helps in conducting lectures based on major events within the enterprise or other similar companies. Using this method

to enhance employees' awareness of safety and strengthen their safety responsibility is crucial.

4.5. Implementation

During the safety culture construction process, power and telecommunication enterprises not only need to perform the aforementioned tasks but also need to take powerful measures to ensure the implementation of relevant work. This enhances the practical effectiveness of safety culture construction. Meanwhile, in the practice of safety culture construction, the following points should be noted: Firstly, the senior leadership of power and telecommunication enterprises should strictly adhere to safety specifications, setting an example, and actively engaging with grassroots employees. This includes listening to the opinions of grassroots employees regarding safety culture construction, obtaining the most authentic information. Secondly, during safety culture construction, management personnel should possess a strong innovative spirit, cultivate a good work style, and constantly innovate work methods. Thirdly, construct a sound reward and punishment mechanism. Reward employees who actively implement safety culture construction plans, and impose penalties on poorly performing employees. This approach motivates employees' subjective initiative, providing robust support and guarantee for the comprehensive implementation of safety management plans.

5. Optimization Strategies for Safety Culture Construction in Power and Telecommunication Enterprises

With the rapid development of the era, the power system is undergoing continuous deepening reforms, driving power and telecommunication enterprises to gradually transition towards standardization and humanization. Therefore, when undertaking safety culture construction, power and telecommunication enterprises must prioritize the concept of "people-oriented." This approach effectively enhances the rationality and operability of the company's safety culture, influencing employees to form correct safety awareness and safety values.

5.1. Guiding Employees to Form Correct Safety Values

Currently, in the production and operation processes of power and telecommunication enterprises, many safety issues arise primarily because employees lack the formation of correct safety values. Due to insufficient safety awareness, employees may become careless in their work. Therefore, in the process of safety culture construction, power and telecommunication enterprises need to accomplish the foremost task of guiding employees to form correct safety values and safety work principles. Simultaneously, during employee education, relevant personnel should use concise and easily understandable language to explain safety culture knowledge. This helps employees quickly understand the importance of safety, the potential negative impacts of not complying with relevant norms on the company, others, and themselves. Consequently, this effectively enhances their sense of responsibility for safety work, ensuring they strictly follow safety responsibility norms in their tasks. Moreover, leveraging safety accident cases in safety culture construction helps employees understand the potential losses caused by safety accidents. This encourages employees to apply the correct values for effective self-restraint and adjustment of their behavior when facing unforeseen events, facilitating the achievement of safety production goals.

5.2. Building a People-Oriented Safety Culture Concept

According to research by DuPont, human behavior accounts for 96% of factors influencing safety. In other words, "people" are the primary cause of safety accidents. To better achieve safety production

goals and ensure data security, power and telecommunication enterprises need to effectively manage "people." Therefore, in the process of safety culture construction, focusing on the management element of "people" and combining it with the business development situation and employee qualities, enterprises should create corresponding safety production cultures. This enhances the richness and interest of safety culture content, ensuring that employees widely accept and recognize safety culture. This leaves a deep impression on employees, prompting them to not only restrain themselves but also supervise and remind their colleagues. This ensures that tasks comply with safety operational requirements, eliminates habitual improper operations, and better prevents safety accidents.

5.3. Establishing a Clearly Defined Safety Management Network

In the safety management process, if responsibilities are unclear, it can easily lead to phenomena such as overlapping or missing responsibilities and mutual blaming. This results in unsatisfactory safety management outcomes and continuous occurrences of safety accidents. Therefore, during safety culture construction, it is crucial to establish a clearly defined safety management network centered around administrative leadership, radiating towards the management department and grassroots team units. Additionally, ensuring that each level has dedicated management personnel with defined responsibilities and management mechanisms guarantees that all levels of staff can operate the principles and methods of systematic management. This includes analyzing and evaluating the safety status of the system, promptly discovering and reporting dangerous signals, conducting rapid and accurate analyses of the causes of signal occurrences, and taking reasonable measures to address them. This effectively reduces the incident occurrence rate, ensuring the system operates in a safe and stable state. Furthermore, the establishment of clear reward and punishment systems and accountability mechanisms should be implemented. Disciplinary actions should be taken against employees who violate work norms or engage in passive work. After each safety incident, accountability work should be initiated to identify those responsible. Dealing with the relevant responsible parties serves as a better warning and encourages them to strictly implement their job responsibilities. This fosters a more rigorous safety culture within power and telecommunication enterprises.

5.4. Setting Unified Standards for Professional Norms

With continuous technological progress, the power system is constantly optimizing, placing higher demands on the work of power and telecommunication professionals. Therefore, to better ensure the safe and stable operation of the power system, power and telecommunication enterprises need to establish more reasonable professional norms. This helps foster a unified standard safety culture atmosphere internally. Constructing reasonable professional norms requires effective safety production technical training. Conducting strict and effective training guides employees to form standardized thinking and work patterns, ensuring they perform their duties during work, adhere to safety operational norms, and improve the efficiency of safety production work and the quality of safety supervision. Therefore, during safety culture construction, power and telecommunication enterprises should effectively conduct employee training. Firstly, effective pre-job training should be provided, emphasizing the importance of safety in the content and operational norms of new employee induction training. This enables new employees to fully understand the crucial role of safety production and develop good work habits. Secondly, regular training sessions for capacity improvement should be organized for existing employees. These sessions cover new safety technologies, laws and regulations, and national policies. This continually enhances their comprehensive literacy and safety awareness, ringing the safety alarm at all times. Lastly, active organization of activities such as safety experience sharing and safety analysis meetings should be

conducted to encourage mutual learning and progress among employees. This strengthens their safety awareness and problem-solving abilities.

6. Conclusion

In conclusion, safety culture plays a crucial role in corporate safety management. Therefore, in the process of business operations and management, power and telecommunication enterprises must recognize the significant impact of safety culture construction on their development. They should actively engage in safety culture construction, establish dedicated leadership groups, formulate reasonable safety culture construction plans based on their actual situations, and actively carry out promotional and guidance work. Particularly, leaders should lead by example, influence and guide employees, and foster the formation of correct safety values among the workforce.

Moreover, power and telecommunication enterprises should build a people-oriented safety culture concept, create a clear and defined safety management network, establish unified standards for professional norms, strengthen safety education and training, rigorously conduct accountability for safety incidents, and thereby enhance employees' safety awareness. This ensures that employees practice self-restraint and mutual restraint effectively.

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