

Discussion on Electric Power Measurement Standardization under the New Situation

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Abstract: This paper discusses the new thinking and overall goal of the standardization construction of electric power measurement based on the exploration of the present situation of electric power measurement in new situation. The relevant ways of standardization of electric power measurement in new situation are further studied. It is intended to bring more thought and enlightenment to smooth operation of electric power measurement in the current environment.

1. Introduction

With the rapid development of China's economy and society and the further improvement of the level of science and technology, the construction of national and regional power systems was further expanded. It is an important content that how to grasp the present situation of the power measurement standardization in the new environment and situation, which will bring the comprehensive thinking of the goal of the standardization in power measurement.

2. Current situation of electric power measurement standardization

At present, with the rapid development of economic society, enterprises and ordinary people will only increase the demand for electricity. The demand for electric power directly leads to the tension situation of existing electricity supply in our country. A lot of experts scholars have proposed to provide more electricity for human society, and to apply the electric metering technology to the electric measurement management process. In the process of electric power measurement, integrated into the high-tech forces of modern social development, establish a standardized management system for electric power measurement according to the original data information and technology level. High-tech power keeps promoting modern social development constantly in the process of electric power measurement, it establish the standardization administration of power measurement according to the original data and technology level as far as possible. In this context, the implementation of the standardization in electric power reduces the working pressure of the relevant workers that ensures that people from all sectors of modern society require the achievement of high quality and safety transport energy targets. The forward development of electric power enterprises in China has been promoted. The actual economic benefit of electric power enterprises has been improved. some contributions to protecting environmental protection and energy efficiency has been made. At the same time, the standardization of electric measurement has shown the characteristics of automation and intelligence, which has a strong effect on the future development of our electric power system, has important positive influence on the financial automation and financial management level of the electric power enterprise office. At present, the traditional meter requirement configuration is difficult to meet the needs of modern social development. On the basis of solving this problem, the degree of electric meter electric meter is improved. It promotes power companies to turn to smart power companies and has laid a solid foundation for the public to provide more intelligent and higher-end services.

3. Ideas and Objectives of the standardization construction in electric power measurement

In view of the problems existing in the standardization management process of electric power measurement in China, the general requirements of the existing companies should be based on the principle of public, fair and fair measurement. In order to ensure the safety of electric energy, the economic benefit of enterprises improve the quality of the service, the power grid company is actively engaged in the formulation modification of the standardization of national measurement and the measurement of electric power industry. In the process of strengthening the standardization of power measurement, power enterprises strengthen the publicity and training of standardization of electric power measurement, improve the standardization of electric power measurement, and strengthen assessment and supervision to improve the level of management of real electricity in enterprises. In the process, the goal of the standardization of power measurement is mainly under the overall framework of the standardization system of national power grid. It builds a standardized system of measurement, which is characterized by corporate characteristics and the reality of the company, the standardized system of measurement is based on the standardization of electricity measurement, electric power measurement and measurement work. Based on the standardization of electric power measurement, the relationship between the various electric metering systems in the company is strengthened, The company strengthens communication between the various levels, the departments and even the electric metering links, also improve the actual measurement efficiency while reducing the standardization of electricity measurement. Implement the management concept and management mechanism of the integration management, based on the extensive application of computer information technology, The electric power enterprise builds the integrated platform of construction planning and user enterprise information interaction according to the actual situation, improves the overall planning and construction of power enterprises at the same time that accelerating the speed of electric power metering information and the level of intelligent construction. It lays a foundation for timely and comprehensive collection of users' demand for electricity, strengthening operation effect and improving service level of power enterprises.

4. The construction path of electric power measurement standardization under the new situation

4.1 The working mechanism of measurement standardization construction is established

(1) To improve the measurement standardization management network

Under the centralized management and control of the relevant administrative departments of power metering standardization of the state grid corporation of China, the basic starting point is the existing metering offices at all levels of the enterprise, power metering management and supervision institutions, power metering technical institutions and power metering practitioners. Taking the professional management of power metering as an important line, the company has gradually formed an advanced and scientific standardized management system network covering the headquarters, regional companies and even local companies. The company builds the unified management and the responsibility division of the power measurement standardization work management system that is the foundation for the smooth completion of the standardization of electric power measurement.

(2) To establish a standardized management supervision mechanism

The establishment of standardization management and supervision mechanism is an important part of improving the working mechanism of measurement standardization construction under the new situation, which can lay a certain foundation for the realization of the goal of China's electric power measurement standardization construction. Figure 1 shows the statistical table of China's electricity consumption from 2013 to 2017. It can be seen from the figure, China is a power consuming country, the accuracy of electricity demand forecast and the scientific nature of electricity consumption supervision are directly related to the maximization of resource value and the sustainable development of resources. In this process, it can be mainly from strengthening the formulation and revision of related standards of electric power measurement standardization. To

improving the supervision and management mechanism of electric power measurement standardization authorities and strengthening the management and supervision of related staff of electric power measurement standardization, that will further establish a practical regulatory mechanism for the standardization of electricity metering. In terms of strengthening the supervision management mechanism of electric power metering standardization, the technical standards, management regulations, opinions and daily work norms related to electric power metering should be uniformly managed. With the help of the construction of modern information management system or other basic platform, the staff should strengthen the implementation and strict implementation of the existing rules and regulations for the standardization of electric power metering. So as to ensure the implementation of the rules and regulations for the standardization of electric power metering. To ensure the effectiveness and scientificity of the standardization of electric power measurement, the regular or irregular review of the standardization in electric power measurement and the collation of statistics are used.

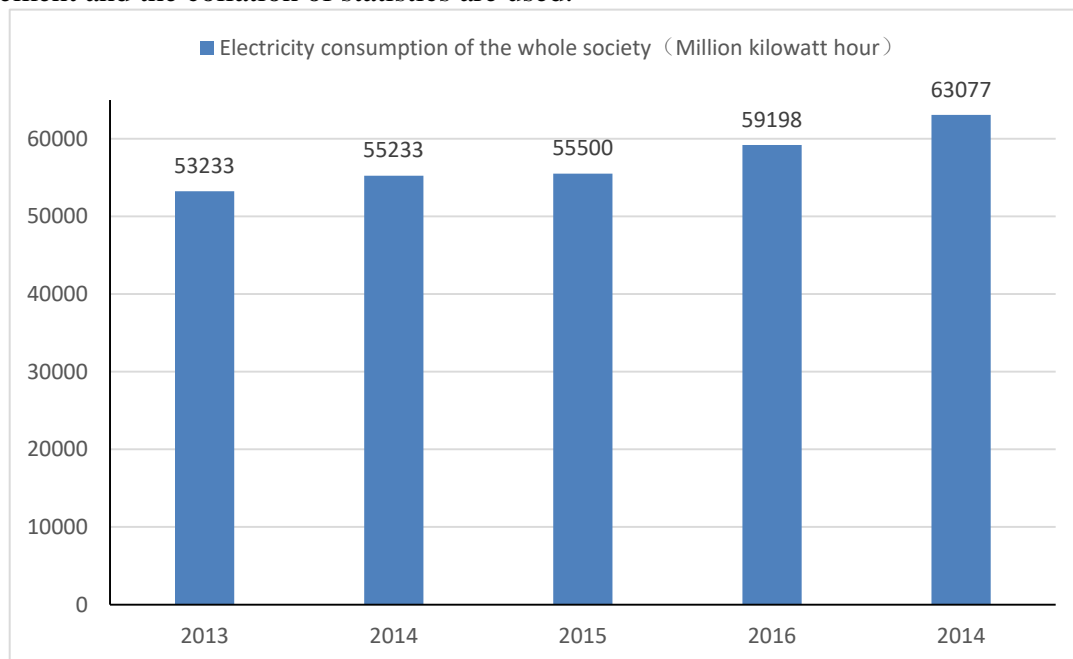


Fig. 1 statistical table of electricity consumption data of the whole society in China

(3) To build an information sharing mechanism

Information technology and computer network technology are indispensable to the further improvement rapid development of all walks of life in modern society. Therefore, it is an important means to build a sharing mechanism based on information technology and centering on the management rules of electric power measurement standardization in the new era. It achieves power measurement standards from the application, drafting, approval, publication, review and revision of the whole process of management by means of cloud platform, internet of things and other basic means of exchange management information forum or space. On the basis of improving the transparency and openness of measurement standardization of electric power enterprises in China, a complete information sharing mechanism is used to record the information ledger related to the measurement standardization of electric power enterprises. In this way, the continuous optimization and improvement of technical regulations and management requirements related to the standardization of electric power metering can be realized, which lays a certain foundation for finding out different revision opinions in the regulations related to the standardization of electric power metering in more directions and more quickly, timely solving many problems found in the implementation of measurement standards.

4.2 Standardized measurement business process

The standardization and unity of measurement business process directly affect the scientificity and rationality of the implementation of electric power measurement standardization. Therefore, in

order to further enhance the development vitality of power metering standardization under the new situation, related enterprises should standardize the corresponding power metering business process. On the basis of constantly improving and perfecting the construction of electric power metering center, step by step the basic principles and guiding opinions of measurement technical standard measures, related equipment configuration, update and upgrade for all levels of the electric power enterprise system should be found out in line with the actual situation of the company, current metering standards of the electric power industry and relevant regulations. On the basis of following the relevant basis, the current procedures of system quantity, source transfer value and power value comparative analysis of electric power enterprises are constantly standardized and unified, the existing data and historical data are fully utilized to formulate and summarize the key operating instructions and guidance of electric power measurement that are in line with the actual situation of the company. Gradually set up the enterprise electric power metering equipment selection, goods procurement, inventory management, equipment inspection and distribution, installation acceptance and even inspection, maintenance and fault treatment of a full range of scientific and systematic standardized operation process of electric power metering. This process continuously guides the actual power metering work of electric power enterprises, paving the way for ensuring the accuracy and scientific nature of power metering work.

4.3 Establish scientific power metering management mechanism

As is known to all, if electric power enterprises want to further improve the management level of electric power measurement standardization, they must improve the overall management level and overall planning ability of electric power enterprises. According to the actual situation of electric power enterprises, it is necessary to formulate the relevant management system standards for the use of electric power enterprises in modern society. Therefore, it is an important part of the standardization management of electric power metering in the new era to formulate and perfect the detailed and systematic electric power metering management mechanism. First of all, electric power enterprises should take the traditional management mechanism as the basis of electric power measurement. On the basis of briefly sorting out and summarizing the actual situation of electric power enterprises, the irrationality in the original management mechanism is abandoned, "Take the essence and discard the dregs." In this way, the existing power metering management mechanism and regulation of electric power enterprises are constantly improved and optimized. Secondly, electric power enterprises should adopt diversified incentive means and incentive measures as far as possible to fully mobilize the enthusiasm and initiative of relevant staff. As far as possible, all the metering staff will be introduced into the management of the power metering system, give full play to the staff's spirit of ownership, to ensure the complete operation of the power system. Finally, in order to further ensure that the relevant measures and specifications of the electric power metering management mechanism are implemented, the actual effect of the measures on the enterprise electric power metering work is given full play. Enterprises should also further strengthen the overall supervision and management of the power metering system to make the power metering system management with a certain degree of transparency and openness. In addition, electric power enterprises should further improve the relevant management mechanism, rules and regulations of the electric power system, continuously enhance the sense of ownership, responsibility and mission of senior management staff on the basis of formulating the corresponding supervision and management mechanism. We should try our best to build a supervision and assessment mechanism that conforms to the actual situation of enterprises, constantly optimize and improve the measurement standardization management level of power enterprises by means of performance assessment. Table 1 is the diagram of the measurement and assessment mechanism of an electric power enterprise.

Tab.1 Schematic table of measurement and assessment mechanism of an electric power enterprise

Rating factor	Level 1: 1 point	Level2:5 points	Level 3:10 points
Participative management	Lack of full-time management personnel, do not pay attention to the safety of staff	There are full-time staff, but the status is too low to be valued	All managers are involved and always put safety first
Employees to perform	Employees care about safety, but their superiors don't take it seriously	Superior attention, implementation difficult	Employees take the initiative to assume responsibility within the responsibility area
Punishment	The reward and punishment mechanism is not in place	Reward and punishment mechanism exists, but the staff is not clear, there are certain difficulties in the implementation	The reward and punishment mechanism is in place,and employees are willing to accept it
Report system	Feedback mechanisms are lacking and problems are reported by employees without being addressed	There is a feedback mechanism, but the implementation is often subject to a variety of adverse factors, the effect is poor	The mechanism is well known to the staff, as long as the staff report regardless of the size of the event can be resolved in a timely manner
Education training	Education and training activities are rarely held	There are institutions, but they are rarely implemented, and specialized education is scarce	Education and training activities are often carried out, with emphasis on matters needing attention

4.4 The integration of standardized measurement techniques

Technology is the foundation support for the smooth development of the standardization of electric power measurement, it is the backbone of the standardization of measurement. In this process, the relevant staff should first formulate and improve the system's problem solving mechanism according to the actual situation, use this mechanism to meet the hierarchical demand for the standardization of power metering in the current environment. Secondly, the actual measurement staff of the enterprise should further improve the actual accuracy and scientific nature of the electric power measurement work by various means such as learning, network learning and off-job training. By means of technical communication salon, the basic strain capacity of the staff is constantly enhanced, the management and control of the documents related to the power metering work of the enterprise is strengthened on the basis of the existing information management system. To the greatest extent to make the staff to realize the power metering work to the advantages of the implementation, in order to further improve the enthusiasm and initiative of all staff to the power metering work. Finally, enterprises should also examine the actual economic benefits and business level on the basis of the existing old equipment and machinery for upgrading. Continue to strengthen the scientific introduction, use of intelligent machinery and equipment, continue to improve the overall scientific, intelligent, automation level.

4.5 New technologies

With the rapid development of modern society and the continuous improvement of the level of science and technology, the standardization of electric power measurement is more and more restricted or promoted by the new and high technology, reasonable use of high technology at present is helpful for the smooth advancement improvement of this work. In the practical process of

promoting the application of intelligent new technology, enterprises can constantly improve the level of power metering staff to control the new technology, improve the professional quality and professional quality of the staff. At the same time, enterprises increase the investment in modern intelligent and automation technology, which helps to enhance the overall fluency and coherence of power metering, it can also stimulate the initiative of electric power metering staff with the help of various spiritual encouragement and material reward, so as to enable employees to strengthen the work of electric power metering. Figure 2 is the statistical chart of single-phase smart meter bidding market share of state grid from 2015 to 2017.

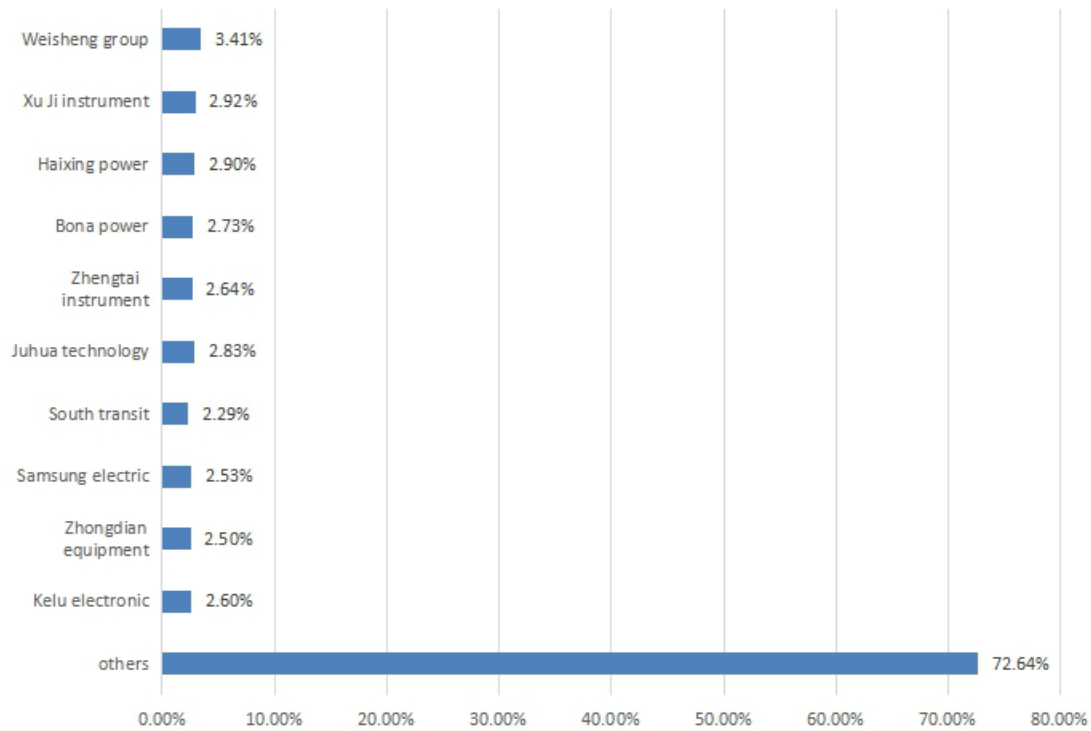


Fig. 2 Chart for market share of single-phase intelligent electric meter bidding market

5. Conclusions

Further improve the work related to the standardization of electric power measurement in enterprises, it is not only necessary to establish a sound management mechanism and systematic and comprehensive rules and regulations, but also necessary to use equipment upgrading, technology introduction and learning, employee motivation and many other means. On the basis of improving the professional level of electric power metering and promoting the technical innovation of electric power metering, the enterprise shall gradually strengthen the experience accumulation of electric power metering and make due contributions to the development and improvement of the standardization of electric power metering.

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