

Analysis of environmental protection management system of power grid enterprises based on green development

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Abstract. Under the development trend of economic globalization, facing the opportunities and challenges brought by the construction and development of countries around the world, how to fully implement the concept of green development, actively build the environmental protection management system of power grid enterprises, and correctly serve the construction of ecological civilization and beautiful China has become the main issue explored by scholars in the power grid industry. Therefore, on the basis of understanding the current situation of environmental protection management of domestic power grid enterprises, this paper, through comparative analysis of the characteristics of environmental management of foreign power enterprises, deeply understand the content of domestic ecological civilization system reform, and finally put forward the construction measures of environmental protection management system of power grid enterprises based on green development.

Keywords: green development; Power grid enterprise; Environmental protection; Management standards; Information system.

1. Introduction

In the rapid development of social economy, China's power grid began to transition to the direction of high-quality and intelligent, not only to promote the steady development of the power grid economy, but also to improve the quality of the regional ecological environment, to ensure that the development of the power grid and the ecological environment are coordinated and unified, and truly meet the requirements of sustainable development. According to the analysis of this goal, it can be seen that the environmental protection technology of modern power grid enterprises has been developed and applied, and hidden problems can be found as soon as possible by strengthening the environmental protection information management of power grid projects, so as to comprehensively protect the ecological environment of the region. In the construction and development of the power grid, we always adhere to the concept of ecological civilization construction, ensure the mutual unity of the power grid development and the ecological environment, and scientifically optimize the energy structure of the power grid, which can guide the transformation and upgrading of the power grid economy in the green direction. Taking the power grid system as the main body of operation, strengthening the supervision of the ecological environment and using effective measures to reduce the negative impact of system operation on the environment can lay the foundation for the construction of sustainable development of the ecological environment. In this process, the rational

use of computer environmental protection technology can carry out environmental protection management for the entire regional power grid system, rather than the control of a single power transmission and transformation project. [1-3]At present, the domestic power grid enterprises mainly include the State grid Company and the Southern Power Grid Company. In the process of the country attaching great importance to green economic development, the two have raised green development to a strategic height and built a relatively complete environmental protection management system, among which S-PDCA cycle management system is one of the most commonly used forms of environmental protection work in power grid enterprises at present. Combined with the analysis of the above, S standard stage contains the company's rules and regulations, workflow, etc, P plan stage contains the company's annual plan, medium and long-term planning, B execution stage is according to the plan stage plan facilities and countermeasures, C inspection stage is according to the standard stage of management system, technical standards and planning plan, the implementation phase of work A comprehensive inspection, processing stage is summarized before the analysis of the successful experience and main problems, quickly form A series of improvement measures. In the rapid development of economic construction in our country environment, all kinds of technical resources are facing the main problems of exhaustion, therefore, the foreign developed countries electric power enterprises pay more attention to the enterprise level of environmental protection work, in the enterprise daily operation, strengthen the construction of environmental management system reform, to meet the demand of the development of social economy and ecological environment. For example, foreign advanced enterprises are relatively perfect in environmental system construction, and put forward standardized and effective incentive and restraint mechanism to comprehensively improve the informatization level of environmental management and establish efficient and high-quality environmental talent team. Professional environmental protection department and environmental experts from different backgrounds to serve, to provide effective basis for environmental management of enterprises. Therefore, after understanding the concept of green development and the requirements of ecological environmental protection, this paper mainly explores the environmental protection technology information management system of power grid enterprises based on economic development and environment, and then puts forward effective development suggestions from the perspective of practice.[4-7]

2. Methods

2.1 System construction

In the environmental protection management of power grid enterprises, the application of computer environmental protection technology, to build a management system according to the needs of environmental protection, real-time monitoring and collection and analysis of environmental protection information during the construction of the project, so as to provide a scientific basis for the orderly conduct of environmental protection work. During the power grid construction operation, is likely to produce magnetic field, high temperature, noise and other kinds of pollution, so according to the standardization of environmental protection management requirements innovation, using the system within the scope of power grid monitoring all projects, compare the difference between the original data and the information collection, to show the performance index of environmental protection level of the project. Combined with the analysis of the construction ideas of the environmental protection system of power grid enterprises as shown in

Figure 1 below, it can be seen that in the construction of the system, manual filling and DCS system collection should be used to collect information, and pay attention to combining the collected data to complete the performance calculation, and finally store it in the historical database. Among them, the enterprise management personnel can complete the planning plan, environmental protection statistics, comprehensive management, cleaner production, risk prevention and control, environmental performance and other management analysis, which can provide an effective basis for the follow-up project management.[8-9]

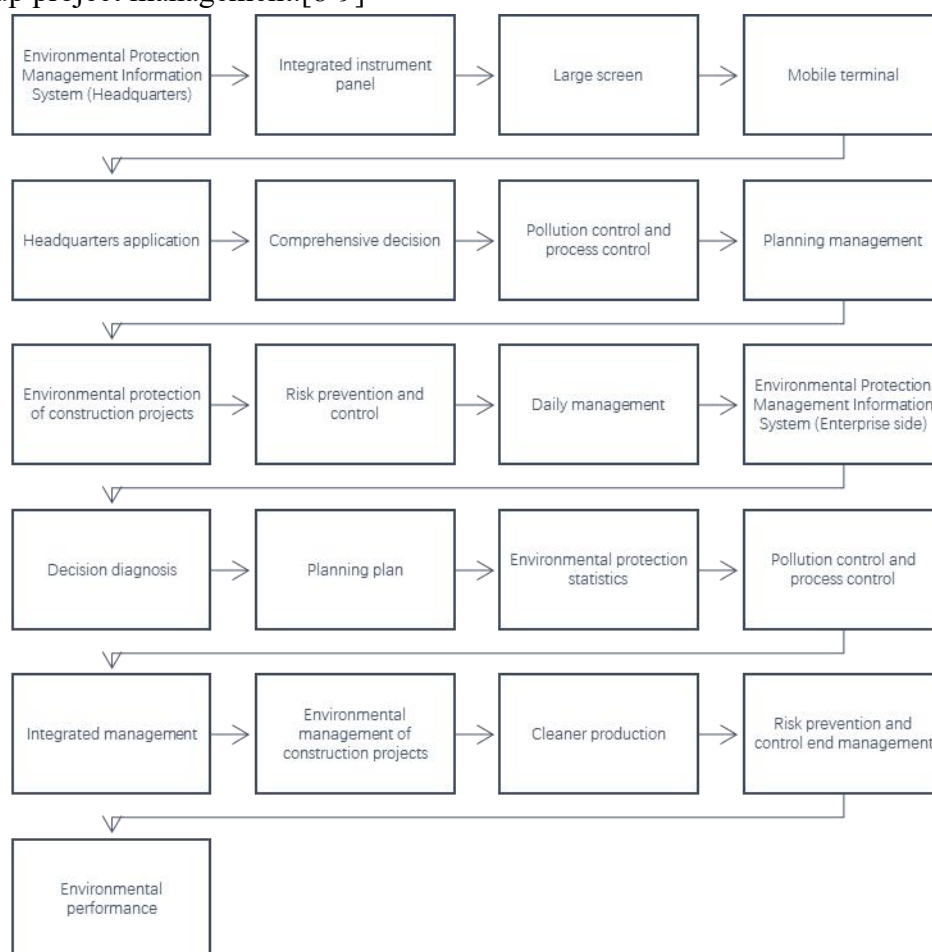


Figure 1. Construction ideas of environmental protection system of power grid enterprises

2.2 Functional module

From the perspective of system functions, it mainly includes multiple modules such as user management, file management and data management. The actual data storage will be processed by distributed structure, the server can be directly connected to the platform, and the employees of all departments can truly realize real-time data update and mutual sharing. After logging in the client interface, the data management of the function modules of the operating system, as the core of the overall function module, is mainly used to complete environmental monitoring and power statistical analysis; the file management module mainly stores the standard specification and laws of power grid environmental protection, and provides convenient conditions for the user access within the system, divides the whole system into ordinary personnel and management personnel, and realizes the control operation after effective identity verification.[10-13]

2.3 Key technologies

First, the geographic information system. Using environmental protection information management system monitoring power grid project implementation, to reasonable use of geographic information system, qLong on the earth's surface space, all geographical distribution data collection and analysis and describe storage, help staff quickly understand substation, tower, line infrastructure location and related information, using the digital form intuitive embodiment, for data query, data statistics, data analysis and provide convenient conditions. From the perspective of practical application, GIS technology can play an important role in drawing, property management, asset management, resource scheduling and other aspects, so it is the focus of research on environmental protection management system of power enterprises at present.

Combined with the geographic information system structure diagram analysis as shown in figure 2 below, the hardware system contains the input equipment, storage equipment and output equipment, geographic data will build professional database, to facilitate the hardware and software system effective connection, and software system contains the computer system software, GIS software and application analysis program, eventually can provide users with effective operation function. From the perspective of practical application, GIS, as a professional and comprehensive data management system, has unique advantages in data centralization, data storage, data operation and data display. Therefore, its application during the construction planning of power grid projects can provide a strong guarantee for the environmental protection of the power grid.[14-15]

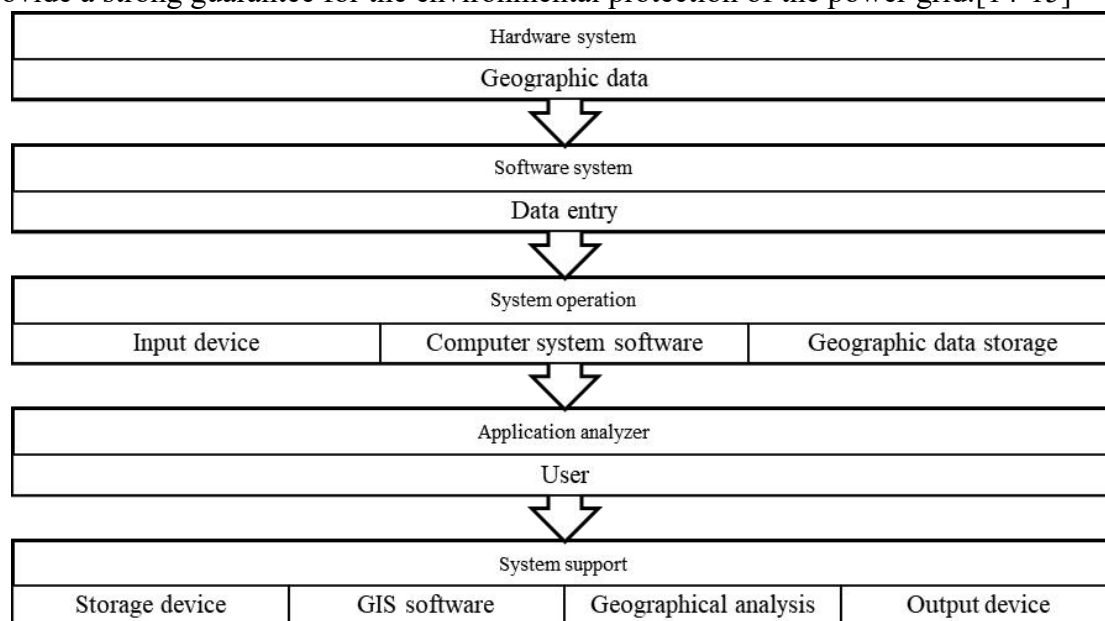


Figure 2. The GIS structure diagram

Second, big data mining. Under the condition of the continuous rise of power grid projects, environmental protection work must extract valuable content from massive data information. Through the use of big data mining technology, the system data analysis can be quickly completed, scientifically processing the problem of increasing accumulated data in the system, help more employees to collect one yuan and buy data, truly realize the seamless format conversion, and provide favorable conditions for the subsequent data use analysis.

Combined with the following figure 3 data mining flow chart analysis, the first small cycle can be seen as the index between business understanding and data understanding repeatedly construction and effective optimization, the second small cycle is data preparation and model,

including data cleaning, data screening, feature generation, data integration, and the big cycle refers to the results before deployment, through the model evaluation back to business understanding link, study the whole analysis process.

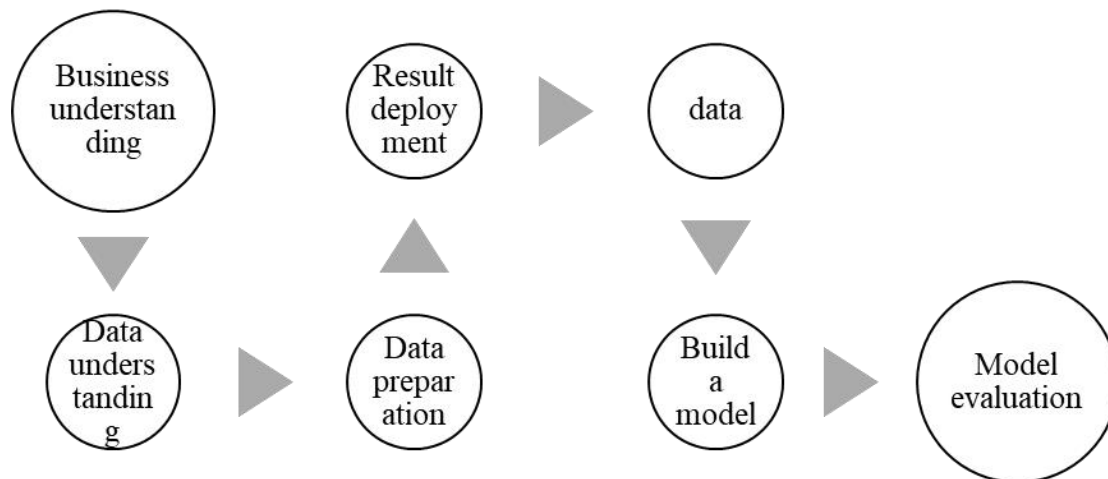


Figure 3. Flowchart of data mining

Third, data security technology. The application of environmental protection technology in computer project management can not only ensure the acquisition of more valuable data information, but also improve the security of data information from the basis to avoid the system because of network attacks, information leakage, information loss and other problems, resulting in environmental protection index evaluation efficiency and quality can not be guaranteed. The application of data security technology in the construction and development of power grid enterprises can start from the cloud perspective, centrally process various computing resources, and share various equipment data and application information. Storing data in the cloud computing platform can further increase data security protection, ensure that the system has stronger computing capacity, truly realize data sharing in automatic management, and minimize the interference caused by external factors on the system operation. In the process of data transmission and system permission authentication, it is necessary to use dynamic encryption to solve the problems of data security storage and identity management. Nowadays, with the support of data security technology, the data transmission, data download, data sharing and other processes of power grid enterprises have been encrypted, which is safer and more effective than the traditional system operation mode, and can truly achieve the basic goal of green development.

3. Result analysis

In the rapid development of China's social economy, the scale of urban power grid construction is getting larger and larger, and the project construction will inevitably have adverse effects on the life of surrounding residents and the operation of ecological environment. Therefore, in view of the environmental protection disputes arising from the engineering construction management of power enterprises, some scholars and enterprises have proposed effective regulatory measures and

classified the environmental protection disputes. Through analysis, it can be seen that the environmental protection management of power grid enterprises based on green development should start from the following points: First of all, the concept of environmental protection should be integrated into the whole process of power operation system, and corresponding assessment objectives should be formulated according to specific tasks. It is necessary to comprehensively control the environmental risks of power enterprises, and actively participate in environmental protection public welfare activities of social organizations, so as to establish a good brand image. Secondly, it is necessary to optimize the enterprise environmental protection management system in view of the current environmental protection work problems, pay attention to staff team building, practical business processes, etc., encourage the staff of the support department to participate in diversified training activities and publicity and education, propose semi-annual and annual plans for assessment and supervision, and focus on the integrity and coordination of environmental protection work. Therefore, effective planning objectives are proposed for the development of enterprise environmental protection. Thirdly, it is necessary to put forward legal provisions and preferential policies related to environmental management, continuously optimize the environmental management workflow of electric power enterprises, regard the realization of green development as the fundamental goal, and pay attention to improving the existing environmental protection business process; Finally, it is necessary to establish an enterprise environmental protection information system, build an all-round deployment of information assessment system, and clarify the technical standards of enterprise environmental management according to the content characteristics of the environmental protection work of power grid enterprises, so as to improve the comprehensive ability of enterprise environmental management and correctly respond to the requirements of green development in the new era.

Conclusion

To sum up, in the construction and development of power grid enterprises, both the leadership and grassroots employees should truly realize the importance of green development, pay attention to the construction and analysis of enterprise environmental protection management system in combination with business needs, and rationally use advanced power grid environmental protection technology, so as to provide basic guarantee for the realization of project management.

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