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To cite this article: Yang Zhenwei *et al* 2019 *IOP Conf. Ser.: Earth Environ. Sci.* **267** 042157

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Application of remote video monitoring system in transmission line construction

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Abstract: XX power supply company creatively uses the remote video monitoring system in the transmission line for real-time online monitoring. Through the remote wireless video monitoring system, construction site supervisors carry portable handheld terminals to realize real-time monitoring of the whole process of the construction line and play an auxiliary role in project management.

1. Introduction

Video monitoring system has been fully applied in substation construction management, but due to the particularity of transmission line construction site with many points, line length, complex terrain, variable climate and great construction difficulty, it has not been able to realize real-time online monitoring of line construction site information. Therefore, the remote video monitoring system is adopted in the line project to give full play to the overall management advantages of the construction unit, the professional management advantages of the construction unit and the construction implementation advantages, to realize the video monitoring of the whole process of remote and scattered operation points, and to strengthen the monitoring of the quality and safety of the project site.

2. Remote video monitoring system

2.1. Overall scheme of remote video monitoring system

According to the actual situation of transmission line construction, the overall scheme is determined through technical advancement analysis and economic comparison. Main idea: through the remote wireless video monitoring system, the construction site supervisors carry portable handheld terminals to realize real-time monitoring of the whole process of the construction line.

2.2. Overall network structure of remote video monitoring system

The system includes three subsystems: information acquisition system, information transmission system and monitoring and dispatching command platform.

The information acquisition system integrates GPS, handheld personal portable terminal, hd portable box emergency command terminal and wireless communication functions, and realizes wireless communication and data transmission between the acquisition system and the monitoring platform through wireless network.

The information transmission system mainly converts and compresses the acquired analog signals into digital network signals through the wireless video server. The wireless video server is connected to



the private network and the monitoring platform through the 3G base station. The monitoring platform realizes video forwarding through the private network and connects to the PC client to issue control instructions. So we can control the site through the network system.

Monitoring and dispatching command platform: the digital video signal transmitted from each monitoring point is transmitted through the wireless network equipment of the receiving end and finally reaches the monitoring center to realize the monitoring of on-site workers. At the same time, the monitoring and dispatching command platform can also issue instructions to the hd portable box emergency command terminal and handheld personal portable terminal of the monitoring point through the opposite path to command and dispatch the safety, quality and progress of the site.

3. The effect of remote video monitoring system

3.1. Realized real-time video monitoring and scheduling command

Through PC client, mobile client and tv-wall, real-time monitoring and command scheduling of site safety, quality and progress are realized. Meanwhile, in the information acquisition system, the portable box emergency command terminal can realize mobile monitoring and command dispatch. The portable handheld terminals have two-way intercom, cluster call and cluster scheduling functions.

3.2. Free from construction and maintenance

Without the installation of any information identification carrier, the global positioning system (GPS) is directly used to realize the automatic positioning, timing and track tracking of line construction.

3.3. with a high degree of advanced, reliability, applicability, scalability and economic practicability

3.4. Good economic and social benefits have been achieved

1) social benefits: remote video monitoring system is used for project safety, quality and safety

The management of schedule can effectively promote the standardization of safety facilities and civilized construction level, and at the same time realize the all-round and whole-process control of construction quality to ensure the quality of the project. The application of remote video monitoring system in line engineering is computer network technology

The expansion and promotion in the field of engineering construction enable engineering management personnel to timely understand and grasp

Construction process information, make efficient decisions. The successful application of remote video monitoring system can improve the technical content of line engineering and the "informatization" level of power grid construction.

2) economic benefit: remote video monitoring system is used for project management and administrator

The operator can control each link of the construction site at a fixed place, reduce the configuration of aZ managers and the use of construction vehicles, and save the cost. The project requires the storage of image data in the whole process for future playback and access to on-site data. The remote monitoring and control system can generate real-time video files and save them to the storage equipment, which reduces the investment in digital cameras, cameras and other image equipment to a certain extent.

4. Conclusion

In general, the remote wireless video monitoring system used in line engineering is advanced, reliable, economical and applicable, which can play an auxiliary role in project management, improve the technology content of line engineering construction, and also play a positive role in promoting the popularization of power transmission and transformation construction in the future.

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