

BLOG

From 1 Month to 10 Minutes: Dahua Revolutionizes Fire Safety Inspection in Yunnan Power Station



In a mountain area in Yunnan Province (China), Dahua Technology safeguards the safe production of a 700+ mu photovoltaic power station, providing intelligent fire prevention and control measures in its vast facilities. The implemented solution significantly increased the accuracy of fire alarms by more than 10 times, as well as the efficiency of fire alarm response by 30%, which help ensure the stable delivery of clean energy to its surrounding areas.

The advantageous location of the power station provides superior lighting conditions that yield to abundant solar energy generation. Covering an area of over 700 acres, the photovoltaic power station produces over 30 million kWh of green electricity annually for its surrounding area. It is equivalent to saving about 370,000 tons of standard coal and reducing carbon dioxide emissions by over 900,000 tons.

Pain Point 1: Long Inspection Time

During the first few years of its operation, the power station was only manned by 5 people working deep in the mountain. These hardworking personnel were responsible for the stable operation of more than 30 photovoltaic arrays. Their daily tasks include inspecting the main transformer, GIS, switch room, station transformer, SVG room and other equipment areas of the power plant, with each inspection usually taking 2-3 hours. During the fire season in summer, the photovoltaic system areas must also be checked regularly. Two inspectors must work at least 5-6 hours a day under the hot sun, taking at least one month to complete the comprehensive inspection.



Pain Point 2: Mountainous Terrain

The distance between these photovoltaic system areas from the power station is generally dozens of kilometers. It can be reached by driving, but some areas are located on steep hillsides. If the car can't reach them, people can only walk or climb to get there. Even if every area is inspected, potential hazards may not be accurately identified due to the inaccuracy of the previous manual monitoring method.



Pain Point 3: Manual Monitoring

In the past, local villagers serve as important fire "informants", especially in the photovoltaic system in remote areas. When a fire is found, the villagers immediately notify the personnel on duty. The staff then reports to the centralized control center first, and cooperate with the forest fire personnel to deal with the fire. For fire alarms, the location of the fire point is be found based on the understanding of the terrain. The information flow, instructions delay, and manual positioning of the fire point drastically extend the response time.

24/7 Remote Fire Safety Inspection & Monitoring

The fire prevention of photovoltaic power station requires attention to several aspects, including identifying whether it is a fire in the surrounding forest or a fire on the equipment itself. Failure to accurately detect and respond to this fire emergencies can cause severe damages and loss.

Dahua has integrated technology with the inspection mode of the photovoltaic power station in order to create a robust system that can monitor the fire situation in the power plant and its surrounding areas 24/7 and to eliminate unnecessary journey between mountains during the inspection.

The dual lens cameras installed at high points were configured with cruising paths, enabling them to conduct uninterrupted online inspections of the power plant and display the images through

the system. "The plant inspection that usually takes 1 month can now be completed in less than 10 minutes. I couldn't even think that it's possible before," said Mr. Cai, inspector at the power station.



During the inspection process, algorithms are used to determine whether there is smoke or fire in each area. When a fire is detected, the system will locate the fire source within a range of 3-5 kilometers and find the fire point within 30-50 meters.



Improved Fire Response Efficiency by 30%

According to Mr. Cai, in addition to eliminating the need for further inspections, improving the efficiency of the overall handling process is another key advantage of this solution. Through integrated communication, the previous reporting and communication methods have been transformed into multi-party terminal equipment discussions. Based on on-site audio and video data, multiple parties can easily communicate and discuss plans and strategies. At the same time, fire alarm information and the fire point location determined by the platform will be sent to relevant personnel in real-time, allowing them to accurately and quickly reach the corresponding location to distinguish the fire. At present, the timely rate of fire alarm in the power plant has increased by over 10 times, and the efficiency of fire alarm response has improved by 30%.

Fire safety is crucial for production enterprises, especially for photovoltaic power stations. With the advent of technology and innovation, Dahua's intelligent fire safety solution not only can help protect the power plants and their staff, but also can ensure that thousands of households are provided with green, environmentally friendly, and low-carbon electricity.

About Dahua Technology

Dahua Technology is a world-leading video-centric AIoT solution and service provider. Based on technological innovations, it offers end-to-end security solutions, systems, and services to create values for city operations, corporate management, and consumers. With more than 23,000 employees (over 50% R&D technicians), Dahua has deployed its products, solutions, and services in 180+ countries and regions, covering key industries including smart city, traffic management, building, retail, banking & finance, education, energy, and more. With in-depth insights and layout of AIoT, Dahua continues to explore emerging fields and has already established businesses including Imou, iRAYPLE, Pixfra, Waythcan, Wisualarm, Dahua Memory, etc. According to Omdia, Dahua is estimated to have been the second largest supplier of video surveillance equipment plus standalone video analytics software, and video surveillance supporting infrastructure to the world in 2021.

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