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Integrated intrusion alarm and access control system for substations in Brazil

Customer story

Safeguarding critical infrastructure
with intelligent security cameras and
a seamless access control solution

The Brazilian infrastructure company Companhia Energética de Pernambuco (CELPE) is the main supplier of electricity in the country's northeastern state of Pernambuco. With several hydropower plants, CELPE provides electricity to a population of more than 8,8 million inhabitants.



Safeguarding infrastructure through an integrated security system

As a critical part of the state's power infrastructure, CELPE operates 240 substations across Pernambuco. Yet, as most of these stations are located in remote areas, the last few years have seen an alarming increase in vandalism and theft of expensive power cables. Looking to safeguard its vital infrastructure, CELPE needed an integrated security solution that achieved three goals. Firstly, keeping out criminals and alerting the police of security breaches was crucial. Secondly, 300 maintenance teams in the field required seamless access control. And thirdly, CELPE required an integrated system with connected fire alarm, communications and voice evacuation which allowed remote management from the CELPE headquarters in Recife.



Automated intrusion solution enables a rapid response

As a one-stop solutions provider, Bosch offered the optimal solutions for equipping sixteen substations. For safeguarding valuable infrastructure against criminals, added security measures included selected cameras with built-in Video Analytics to automatically set off intruder alarms and alert authorities. The internal analytics can cover the potential shortcomings of a system operator and indicate to the security personnel where they should concentrate their attention. All cameras are connected via the integrated Bosch Video Management System (BVMS) and are managed from the headquarters in Recife, therefore ensuring a quicker recognition of criminals and automatically alarming the police.

After struggling with intrusion over the last few years, the 300 maintenance teams serving various substation sites are now provided with seamless access control through a central cardholder management.

The administration of user credentials and access rights for the teams are centrally managed by the Building Integration System and hence prevents security breaches. Due to the central management of user access rights at all sites, robbery is eliminated and the overall service level is enhanced.

To prevent incidents due to communication difficulties, the system has also streamlined communications among

the service teams in the region by including elements such as conferencing and automatic alerts for fires and intrusions through a messenger system. This has resulted in an increase in communication quality and a simplified work process. The connected fire alarm system includes smoke and heat detectors as well as voice alarm and evacuation through loudspeakers. As a result, all teams, system operators and authorities are quickly informed in the case of an incident.





Roll-out to all 240 CELPE substations



The Bosch solution has proven to be an asset for CELPE and its personnel after having been successfully installed in sixteen stations in Pernambuco. Aside from safeguarding the substations against criminals, the system has also simplified the work process by connecting the stations and the headquarter through streamlined communication. The central management of user access rights ensures a safer work environment for all service teams. Satisfied with the end-to-end solution, CELPE has now commissioned Bosch to equip approximately 240 electrical substations over the next few years.