



CASE STUDY: ELECTRICAL SWITCHYARD

Background

Although the electrical utility industry historically has not considered perimeter security to be a top priority, new threats associated with loss prevention (copper) and emerging regulatory requirements have made perimeter protection an integral part of overall security planning. Unfortunately, budgets have not kept pace and the cost for trenching the delicate ground grid to bring power and signal infrastructure to the perimeter has been prohibitive. Until now, video analytics have been limited to fence line camera locations (parallel views) and therefore have not been a viable option.

Challenges

Placing surveillance cameras or sophisticated edge devices in a high electromagnetic interference (EMI) environment increases the risk of failure and damage to sensitive electronic components. The use of wireless communications presents additional difficulties.

The client's high security network prevented the creation of domain services accounts, which prohibited the installation of the Coordination System (CS) software required for configuration and monitoring from any location in the operational network.

The view through an irregular perimeter fence line presented numerous occlusions due to existing structures. In addition, there was a routinely high level of authorized personnel within the secure area. It was necessary to accommodate the structures and personnel activity without causing nuisance alarms while still maintaining a zero misdetect level.

SightLogix Impact

The SightLogix solution, due to its long range capabilities and the unique geo-registration of security policy zones, was able to deploy a perpendicular view of the perimeter fence line. Two SightLogix visible cameras were mounted on the roof of an existing building. The lighting for the region of interest was a single mercury vapor at the fence line. The distance to the fence line was approximately 300'. The field-of-view for each camera was 40°. This provided approximately 435' of continuous linear perimeter surveillance with detection and monitoring that extended up to 1,000' beyond the perimeter. This approach eliminated \$90,000 of trenching and infrastructure cost.

SightLogix also provided a mobile deployment kit (MDK) with a 50mm Thermal Sensor. The MDK was placed near transformer switch banks to monitor 1,200' of fence line. The MDK was self-powered via solar panels/batteries. Communications were provided via a Premier Wireless system mounted on the MDK. The thermal sensor's azimuth and elevation were controlled via a Quickset QPT-30. No problems were observed, including any interference from high EMI.

A quick modification to the database management system allowed for a seamless installation onto the clients high security network.

Due to the geo-registration of the security policy zones, SightLogix was able to achieve extremely high accuracy in target detection and location along the perimeter and beyond while ignoring authorized activity within the facility. All portions of the fence line were thoroughly tested for walking, running, and stationary targets. A zero misdetect and low NAR result was achieved even with the large number of fence irregularities, occlusions, obscurations, and interior activities.



"SightLogix has delivered on everything they have promised."

--- Sr. Security Representative

What: 250Kv Electrical Switchyard
Where: Rural (adjacent to cattle farm)
When: 2007

Previous: FPS, CCTV

Issues: Lighting, high EMI, budget constraints, network security

Lighting: Mercury-Vapor

Spectrum: Visible, Thermal

Total Perimeter: 2000'

Total No. Cameras: 3 (2 fixed, 1 mobile)

SightLogix ROI:

- Eliminated trenching cost
- Long Range (1200') Thermal
- Secure network interoperability
- Zero misdetect rate
- Minimal FAR/NAR

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