Securing dams and waterway infrastructure

Senstar has been helping dam operators throughout the U.S. secure their control houses and spillways against unauthorized intrusions.

Water retention and control services do not normally receive much attention, but their operations are critical to the nation's well-being. Dam failures can cause loss of life, destruction of property, and interruption of critical services like electrical generation. Even simple trespassing for innocuous reasons, such as finding the best fishing spot, can lead to drownings or bodily harm.

The operators approached Senstar with a set of security problems unique to the dams sector:

- Remote sites located away from populated areas
- Aging infrastructure
- Poor or limited network connectivity
- Threats from both upstream and downstream directions
- Rapidly changing water levels

SECURING GATE AND CONTROL HOUSES

The operators' primary concern was securing remotely located buildings from unauthorized access.

For facilities with existing security lighting, Senstar's FlexZone fence-mounted perimeter intrusion detection sensor was deployed. The system detects attempts to cut, climb, or otherwise disturb the fence securing the site. Like most Senstar products, FlexZone includes built-in auxiliary inputs that report on the state of the gate latch, enabling gate access to be monitored.

For facilities without proper security lighting, the Senstar LM100 Intelligent Lighting and Perimeter Intrusion Detection System proved ideal. Combining two security functions, the system detects and illuminates intruders while they are still at the fence-line. Strobing or instant illumination at the intrusion location lets intruders know they are detected and dissuades them from further tresspassing.

Sensor alarms from both systems are communicated to the site's existing intrusion panel, which communicates with the operations center.

Senstar provides innovative, flexible security solutions for waterside and downstream applications, hydroelectric power stations, on-site buildings and assets, and dam wall integrity monitoring.

WATERSIDE SECURITY

To help keep boats away from the dam and manage liability risks, Senstar's Outdoor People and Vehicle Tracking video analytic monitors activity on the water. Optimized for outdoor use and in the presence of moving water, the system triggers flood lights when boaters approach fixed or floating barriers.

DOWNSTREAM SECURITY

Downstream areas need to be protected against a different type of threat: fishermen and other outdoor enthusiasts. For this application, FiberPatrol was selected. In addition to their extended coverage distance, the fiber optic cables are waterproof, a key requirement in areas that are periodically submerged. FiberPatrol sensors also have the additional benefit of supporting both fence and buried applications, enabling the same sensor cable to protect both fenced and open areas.

THERMAL CAMERA SUPPORT

The use of thermal cameras provides both security and operational benefits. In addition to 24/7 security, thermal cameras can be used to remotely monitor dam wall integrity and perform fissure identification.

An open, non-proprietary, all-in-one system, the Senstar Symphony Common Operating Platform supports cameras from all major manufacturers, including thermal cameras. Technicians can use the free mobile, web, and Windows® clients to receive alerts and remotely assess the security and operational status of sites, anytime and anywhere.

INTEGRATION

Senstar sensors work with virtually all security systems. Software integrations are available for industry standard video and security management systems, while built-in I/O capabilities ensure that sensors can report zone, supervision, and equipment status events to on-site intrusion panels or alarm systems.

Sophisticated aggregation capabilities enable sensor data to be linked and integrated with SCADA systems. For remote, unmanned sites with limited network connectivity (such as cellular or satellite-based communications), bandwidth requirements are minimized and local fallback options are available.

APPLICABLE SENSTAR PRODUCTS

FLEXZONE

Locating Fence-Mounted Intrusion Detection Sensor

Detects and locates any attempt to cut, climb or otherwise break through the fence. Accurately locates intrusions and avoids nuisance alarms by rejecting distributed events generated by environmental conditions.

FIBERPATROL

Point-Locating Fiber Optic Intrusion Detection System

Fence-mounted, buried, or deployed in a wall-top configuration. Using two sensor channels, FiberPatrol supports a cut-immune configuration. The fiber optic sensor is immune to lightning and EMI and requires no conductive components or grounding points in the field.

SENSTAR LM100

Hybrid Perimeter Intrusion Detection and Intelligent Lighting System

Combining two key security functions, the Senstar LM100 acts as a powerful deterrent against intruders, detecting and illuminating them at the fence line. Dimmable, targeted illumination makes it highly suitable for applications where light-pollution is a concern.

SENSTAR SYMPHONY

Intelligent Video, Security, and Information Platform

An all-in-one solution for video, security, and information management. Senstar Symphony supports edge-based video storage, ensuring critical video is not lost in case of a communications failure, while the Senstar Enterprise Manager remotely monitors the camera health and firmware upgrades.

SENSTAR VIDEO ANALYTICS

By leveraging existing video surveillance infrastructure, video analytics are a highly cost-effective means to augment security with new detection capabilities, reduce staffing requirements by directing attention to key events, automate facility functions, and collect data.