



Case Study



Prison Gets Maximum Life Safety Sentence

Prisons are challenging environments to protect from fire. Placement of fire alarm components within common areas often leads to system tampering and disablement. Locating a fire within a network of cells without the help of modern technology is futile. To be effective, prison fire protection systems must incorporate highly-intuitive, cutting-edge technology in compliance with local regulations and applicable standards.

The Coastal Bend Detention Center near Robstown, Texas, is a new \$30 million federal detention facility that can house more than 1,000 prisoners arrested by multiple federal agencies.

The facility's construction was overseen by LCS Corrections Services, one of the nation's largest private prison operators.

Per LCS' specifications, the Detention Center was built to resemble a mini, high-tech city. The complex boasts video and computer technology for fire and security systems. Its medical facilities include an emergency room, X-ray equipment, dental office and isolation cells. A track, basketball courts and soccer fields compose the outdoor recreation areas. An educational facility and library are also located on prison grounds.

The buildings are independent of each other, yet all must have connected security and fire detection systems. Moreover, its remote location makes for longer response times from the local fire department.

When designing the prison's fire alarm system, ease-of-use was a top prior-

ity. The facility's management did not want staff concerned over operating the system during an emergency.

Richard Henke of On Guard Systems, a Lafayette, LA-based fire alarm and security integrator, designed and installed the prison's fire alarm system.

"We wanted something that was reliable, flexible and code compliant," says Henke. "The guards need to be alert at all times so a system that can be easily understood and operated was essential."

Utilizing four MS-9600LS addressable fire alarm control panels, manufactured by Fire-Lite Alarms, as the brains of the prison's extensive system, Henke was able to satisfy a myriad of code and customer requirements. Supporting up to 318 addressable devices on one SLC (signaling line circuit), the MS-9600LS' capacity can be quickly expanded to 636 points via an optional second loop.

"Although it's designed to perform some specialized functions, this is a pretty straightforward system that's easy to use," says Jay C. Crick, Project Manager with MWL Construction.



*Coastal Bend Detention Center
Robstown, TX*



The panel's compact design and simplified programming navigation make it a cost-effective solution for many medium to large size applications. Furthermore, the non-proprietary availability of parts makes for easy maintenance of Fire-Lite systems.

"This way, any repair crew can make the adjustments or repairs if the system encounters a problem," Henke says. "Service calls can be expensive. The prison needed a system that anyone can service."

Fires are a common problem within prisons, typically taking place in locked cells when inmates are present. Considering the small space and restricted means of egress, early detection and response are critical. Consequently, code requires addressable point detection within all cells.

When fire alarm devices such as initiation and notification appliances are vandalized, they are not only expensive to repair or replace, but also present a variety of life-safety hazards. With this in mind, the entire system's detectors are protected with stainless steel baskets. Additional anti-vandalism measures were taken by encasing the system's wiring in conduit run underground and within the facility's walls.

"Prisoners have a lot of time to think about how they can dismantle a camera or destroy a detector," says Henke.

"We have to ensure the detectors are not ripped down and fashioned into weapons."

NFPA 101, the Life Safety Code requires new jails to be constructed of limited- or non-combustible materials. Automatic fire sprinkler and detection systems are mandated to be present throughout. More than 500 detectors and sprinkler heads were installed throughout the Detention Center.

"The whole facility is sprinkled, which includes sprinklers in every cell," says Crick. "The fire alarm is tied to the sprinkler system, so if water is released, it triggers an immediate alarm."

Henke remembers this fire alarm's specifications were very particular, requiring most above ground components be covered in a way that deters tampering. The system's head-end controls were also required to be split up. Therefore, if a portion of the system is damaged during a riot, the other system areas would not be affected.

Riots are common events in detention facilities. To break up riots, guards utilize tear gas bombs, which can wreak havoc on the typical fire alarm system. With this in mind, the systems protecting the prison's larger gathering areas (i.e. cafeteria, recreation room, etc.) were configured to announce alarms and clear away smoke in specialized patterns.

"We can't evacuate prisoners, so we evacuate the smoke instead," says

Henke. "If a fire breaks out, it's essential to be able to clear the smoke and get to the source to extinguish it quickly."

Henke programmed each system to activate NAC (notification appliance circuit) devices, sounding an alarm within one minute before powering on fans to clear the area of smoke.

In compliance with Texas jail standards,

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On Guard Systems*

all prisoner compartments were tested using smoke bombs to insure proper activation of smoke detection devices. The removal of smoke via ventilation systems triggered by the MS-9600LS panel was timed during tests conducted within each of the Detention Center's 216 compartments. All tests were successful, passing on the first try.

"We had our share of challenges, but I believe this system has exceeded everyone's expectations," Henke says.



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