

Yakima Valley Justice Center

Farenhyt
CASE STUDY

NEW FIRE PROTECTION SYSTEM ADDS ADDITIONAL LAYER OF SECURITY TO CORRECTIONAL FACILITY

At the new Yakima Valley Justice Center in Yakima, Washington, security is everywhere you look.

Start with the building itself. An imposing mixture of steel, concrete, wire mesh, and re-bar, the new Justice Center is virtually inescapable. In fact, the 228-bed facility, which replaced the previous center in Tacoma, is arguably the safest, sturdiest structure the Yakima County Department of Corrections has ever constructed.

Although comprised of different materials, the security system is no less daunting, as it is one of the most advanced systems of its kind in the nation. This comprehensive, PLC-based security electronics package operates from two separate locations in the facility via 36-inch touch screen panels, allowing correctional officers to manage the entire building. Further, officers can use handheld wireless devices with Voice Over Internet Protocol (VoIP) capabilities to control inmate sleeping areas as well as lighting, open cells, closed circuit television cameras (all 56 of them), and more.

When it came to selecting a fire protection system for the facility, the commitment to security was just as strong, for the protection of both the inmates and the employees who would work there. Originally, the plan was to tear down the existing Tacoma facility, and bring as many parts and pieces as possible for reuse in the new facility, including the fire protection system. However, the cost of upgrading the existing system would have been higher than the cost of a brand new system.



Yakima Valley Justice Center protected by IFP-1000 Panel.

After considering a number of bids, the project's electrical contractors brought in E3 Solutions, a Yakima-based company that specializes in low-voltage contracting, to address the fire protection system.

The company, which installs, inspects and services a wide variety of equipment, including fire and security alarms, played a key role in the decision of which system to employ.

Derek Karel, president of E3 Solutions, states, "We were required to determine exactly what management was looking for and how the system would ultimately interface with the facility's various systems, including HVAC, suppressions systems, smoke control, everything."

After reviewing all the requirements, Karel decided that the best fire system would be one

from Silent Knight, part of Honeywell's (NYSE: HON) Fire Systems Group and a company that offers industry-wide compatible fire alarm solutions. Extensive discussions with the local Silent Knight representative convinced Karel to choose Silent Knight's Farenhyt IFP-100/1000VIP (Voice Integration Panel) line. E3 worked closely with the electrical contractors to have the IFP-100/1000 written into the system specifications.

The IFP-100/1000 supports 127 addressable devices and can be expanded to support up to 1016 addressable devices that allow the user to determine precisely which device has been activated and/or needs attention. It also uses a distributed amplification scheme to enable power sources to be linked directly to appropriate areas of evacuation, rather than having to institute a complex wiring system.

The IFP-100/1000VIP voice evacuation capacity is scalable from 50 to 400 watts to meet a variety of application needs, including small-to-mid size universities, office buildings, manufacturing facilities, shopping centers and other institutions.

The integrated voice evacuation feature of the IFP-100/1000VIP offers a built-in Digital Message Repeater (DMR) that can play three separate messages, field programmable voice prompts, a built-in microphone, and ground fault detection to simplify troubleshooting of ground faults on the system.

To complement the IFP-100/1000, E3 chose SD505-AHS Addressable Heat Detectors and SD505-APS Addressable Photoelectric Type Smoke Detectors, along with assorted duct detectors and relays for interfacing with the suppression and smoke control systems. The SD505 heat detector is an absolute temperature device, meaning it responds to an alarm immediately if the temperature goes above the trip point (programmed at the panel).

The SD505-AHS unit is comprised of an externally mounted thermistor that reads the temperature from the air, then transmits an analog signal representing the temperature to the fire alarm control panel. This heat detector is ideal for environments where smoke detectors cannot be used because of the presence of steam or cooking fumes such as in a kitchen.

The SD505-APS is particularly suited to detecting dense smoke typical of fires involving materials such as soft furnishings, plastic, foam or other similar materials which tend to smolder and produce large visible smoke particles. The unit is made up of an LED light source and a silicon photo diode receiving element. In a normal standby condition, the receiving element receives no light from the pulsing light source. In the event of fire, smoke enters the detector and light is reflected from the smoke particles to the receiving element. The light received is converted into an electronic signal, causing the LED to light continuously.

Karel pointed to the ease of programming of the IFP-100/1000 as a significant advantage over competitive systems.

"Programming is extremely simple," said Karel, whose company had begun carrying the Silent Knight line a short time before

recommending it for the Yakima center. "In fact, we used just one technician to install and program the entire system. This was very impressive, given how many different devices and zones we had to link back and forth.

The installation of the system, including final testing, took only 4 ½ months - a further testimony to the system's ease of programming.

E3 interfaced the fire alarm system, which offers a total of 422 sensing points, into the security system for notification on the security touch screen of any alarms within the facility, as well as integrating it with the door locking devices and CCTV. Consequently, in the event of a fire event, officers controlling the facility have additional notification besides the two annunciators.

Initially, two more buildings were scheduled to tie into the system, which would require the installation of two additional IFPs. When con-

"Programming is extremely simple," said Karel, whose company had begun carrying the Silent Knight line a short time before recommending it for the Yakima center. "In fact, we used just one technician to install and program the entire system. This was very impressive, given how many different devices and zones we had to link back and forth.

struction begins on these buildings, Silent Knight will once again serve as the fire protection system. Currently, E3 monitors the initial system from a remote location. Eventually, facility personnel will assume monitoring responsibilities.

To further ensure that the IFP-100/1000 would interface seamlessly with the center's complex security system, Silent Knight sent a panel to the security electronics manufacturer, located in Alabama. This allowed the manufacturer, who had never interfaced with Silent Knight equipment before, to test and verify the connection.

A major challenge to the project related to the nature of the facility itself, said Karel.

"If a fire breaks out at the center, the fire



department can't simply roll in and start fighting the fire," he explained. "They need to be led through the gate and escorted in, and then they have to fight the fire in a very controlled fashion. Plus, you can't just open the doors and evacuate the place like you would in a typical commercial building.

"The bottom line was that the facility needed a system that would provide accurate information so that only the inmates affected by a fire would be moved from one location to another and the disruption of the center would be kept to a minimum. And we also had to ensure that the equipment was located in common areas that firefighters could reach easily. Plus we needed to protect all of the equipment from inmates with security covers, anti-tamper screws and other measures."

There were quite a few zones involved in this process, but using an easily installable and programmable Silent Knight system, Derek Karel and E3 accomplished the task, giving the Yakima Valley Justice Center a fire protection system that is second to none. And that gives everyone involved with the center a very secure feeling.



7550 Meridian Circle • Maple Grove, MN 55369-4927
800-446-6444 • 763-493-6400 • Fax 763-493-6475
www.silentknight.com p/n 350905 3/06 1K