Project Profile Veterans Administration



PROTECTING THOSE WHO SERVE

The U.S. Veterans Administration (VA) provides healthcare, disability benefits, pensions, home loans, life insurance and educational assistance to the nation's military veterans. At the Veterans Administration Palo Alto Health Care System (VAPAHCS) in Oakland, Calif., more than 85,000 veterans receive some of the world's finest medical care delivered by dedicated doctors using cutting-edge technology. VAPAHCS also is a teaching hospital affiliated with Stanford University and provides training for 1,300 residents, interns and students each year.

As part of an unprecedented amount of construction and expansion, VAPAHCS recently replaced the entire fire alarm system in four buildings: a four-story, 400-bed hospital with research facilities, a four-story administration and research facility, a 9,000-square-foot medical imaging facility, and a six-unit emergency generator building.

NOTIFIER®
by Honeywell

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Intrepid Electronic Systems Inc., Oakland, began work on the project by performing field surveys and determining what the system's sequence of operations for evacuation, notification and response procedures would be, and two years later, construction and commissioning was complete. Intrepid was one of three General Services Administration (GSA) partners that were asked to prepare bids for the project.

"By choosing the NOTIFIER product for its fire alarm replacement, the government could limit their solicitation to GSA partners," said Kurt Brinkman, principal.

Intrepid operated as the general contractor on the project and worked directly with its only subcontractor, AON Fire Protection Engineering, Chicago, to design a system that would meet the VA's installation guidelines.

Since then, Intrepid also has completed the design/build installation of a NOTIFIER fire alarm system at the John Muir Medical Center, which is a 324-bed, $600 million acute-care facility in Walnut Creek, California.

Intrepid was tasked with providing a turnkey, design/build installation that replaced the existing fire alarm systems in four buildings without any disruption of service to the existing devices or controls. The more than 1,200 intelligent devices in the four buildings consist of pull stations; smoke, heat and duct detectors; control and monitoring modules; and notification devices (including speakers, strobes, graphic annunciators, microphone stations, programmable soft key switches to activate evacuation zones and other system interfaces), which had to be integrated with the security, mechanical and electrical systems throughout each building.

New conduit was run from the new NOTIFIER fire alarm control panels to 35 existing alarm panel locations. Duplicate main site fire alarm panels were maintained during the project, and both new and existing NOTIFIER systems were monitored and controlled in parallel.

The requirement that the existing system remain operational led Intrepid to employ multiple shifts of installers and electricians in the migration from the existing system while the new system in each renovated area was pretested.

"After each segment of the new system became operational, the old components had to be removed immediately, which did alleviate traffic in the work zones," Brinkman said.

The entire fire alarm system is a vast network connected by fiber optic cabling, and it serves as the backbone of a sophisticated notification system. Managed by NOTIFIER's ONYXWorks graphic workstations, it can be controlled from virtually anywhere on campus, and it features integrated digital voice evacuation that can broadcast multiple distinct messages simultaneously. Each of the networked control panels is individually programmed and operates independently, yet cohesively, as part of the unified network.

"The rapid response system can communicate with one person, one building, an entire campus or multiple campuses," said Norman Clevenger, Intrepid project manager.

THE MANY CHALLENGES

As the general contractor, Intrepid was responsible for all of the engineering, coordination, training, safety, installation and commissioning.

"Although we've been installing fire alarm systems and serving as an engineered system integration contractor for specialty low-voltage electronic systems since 1997, this was our first large design/build project," Brinkman said.

Intrepid managed its general contractor responsibilities by closely coordinating the needs of the various hospital department heads and stakeholders and ensuring that hospital staff members, emergency responders and dispatch personnel were continually updated.

"Such close coordination was required because the facility had to maintain code-compliant fire protection for the duration of the installation," Clevenger said.

Maintaining the existing fire alarm system network architecture required that each of the smoke control zones in each building has its own fire alarm control panel. The new system reduced that number (35) to four networked NOTIFIER control panels. New fiber optic cabling was installed, and the network was then tested to verify proper operation and signaling to the main site fire alarm panel located at the police dispatch center and to the monitoring system station at the maintenance facility.

"The monitoring system is scalable for future mass notification functions, if desired," Clevenger said.

The contract also stated that installing the new fire alarm should not disrupt any of the mechanical systems. The major concern, of course, was to ensure that the airflow to the operating theaters, imaging and intensive care units, recovery rooms, laboratories, and patient isolation units was never disrupted or impeded.

"With 24 mechanical and fire alarm zones, we needed to continuously verify the existence of the mechanical system interfaces and the operation of each of the mechanical zones," he said.

To overcome that challenge, the company reverse-engineered the operations of the existing mechanical systems to confirm that they functioned as originally designed and then monitored them for any deviations during construction.

The crew, atypically composed of an average of two inside wiremen and an average of four sound and communication technicians, needed to obtain federal security clearances and site-specific training that covered system installation methods and the VA's expectations on dealing with staff, patients and visitors.

"In any VA hospital, the care and respect received by the veterans is the top concern," Brinkman said.

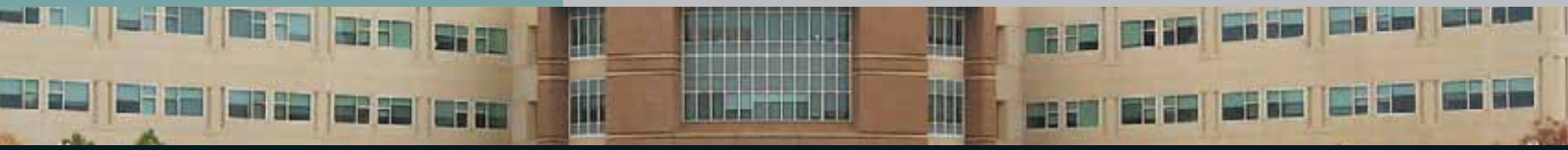
When Intrepid was finished, the company had removed an old, outdated fire alarm system and installed a new, sophisticated system in an acute care hospital without a single false alarm or complaint from the patients, visitors or hospital staff.

"Extensive coordination and communication are the key to successfully concluding any project," Brinkman said.

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