Overview

Campus Fire Alarm Reporting Network

The existing fire alarm system on campus consists of 11 buildings with stand-alone Fire Alarm Control Panels (FACP), 15 buildings with initiating and notification circuits that are connected to or slaved from control panels in other buildings, and 1 building with a FACP that centrally monitors the status of all other FACP’s on campus. This configuration is capable only of transmitting “alarm” or “trouble” signals from each building. The system cannot transmit the alarm location within the building, or differentiate between the fire alarm and sprinkler systems activating an alarm as required by current codes.

Although limited in performance, it was a very creative and inexpensive way to build a functional campus fire alarm network where one was not planned nor accommodated through Capital Project appropriations. With the exception of buildings #5, 5B, 11, 27 and 28, all FACP are at least 20 years old, out of production, and spare parts not available. The system is well maintained, but it has been expanded beyond its intended use and lifecycle, and is obsolete.

The existing intra-building wiring used to monitor all FACP’s on campus is run in the existing underground conduit system. This raceway network is old and in some areas on campus, beginning to fail. The vaults are typically full of water which shortens the life of the cable on which the system operates. Since the system serves as a critical link between all campus buildings and the automatic dispatch of emergency services, they are usually provided with redundant wiring and reporting capabilities. This system lacks that capability. Should the cable fail for any reason, all buildings could lose their fire alarm transmission capability.

To compound matters, and noted during a recent survey, some of the existing buildings contain large amounts of classroom materials and supplies that increase the fuel load within the building. In the absence of a sprinkler system in many instances, this places a heavier burden on the fire detection and reporting system, to operate quickly and reliably. Building #3 is the auditorium for the campus, and is a good example of some of these conditions. The building is not sprinkled, has no heat or smoke detection in the auditorium area, limited detection in the stage and lobby areas, and too few notification devices in the auditorium area to meet current fire codes.

It is recommended that a new campus fire alarm system upgrade program be implemented that includes the replacement of the old, outdated FACP’s with new, addressable panels, and replacing the field devices (heat detectors, smoke detectors, pull stations, horn/strobes, etc.) in each building. Fire detection systems of current manufacture, are provided with the feature of transmitting much more information to the fire department than just the building number. These systems now transmit as standard, information about the actual device (i.e. smoke detector, pull station, etc) that triggered the event and a description its location. This greatly improves the ability of emergency response team, to locate the source of the alarm.

As FACP’s are replaced in each building, additional heat and smoke detection devices, and notification devices can be installed and connected to the new FACP to bring each building up to current code requirements.

The new, campus wide fire alarm network would be compatible with the existing underground conduit and vault system, however for reliability and redundancy, the new system will operate over a fiber optic cable loop.

Recommended Improvements

FA1 Replace existing obsolete fire alarm detection and campus reporting system with new, addressable system. Estimated cost: $1,025,000