

February 9, 2012

Fire Protection Engineer
Design and Construction Administration for a Fire Sprinkler System
Hale Library Sprinkler System Replacement, Kansas State university

Hale Library currently has a single interlock preaction sprinkler system (smoke detection is the actuation method) that was updated and expanded in 1997. Due to frequent false alarms on the fire alarm system, the system has repeatedly tripped and filled the pipes with water. Pipe routing, and inadequate low point drains prevents the system from draining completely, and as such, the piping is deteriorating and is in need of replacement. The current system is divided into four (4) zones (water flow switches) to protect a total building area of 358,000 GSF.

The scope includes fire sprinkler design drawings and specifications for review and approval by the State of Kansas as well as bid documents for a fire sprinkler contractor to bid and install. Engineer's scope also includes attending review meetings during design, construction administration, and project close-out. It is anticipated that the new system will be a wet sprinkler system with all risers, branch piping, sprinklers, control valves, and accessories being replaced. In general, existing sprinkler locations are to be reused, however layout and spacing shall be reviewed and evaluated for conformance with NFPA 13-2007 based on the current occupancy and use of each space. There are various building interior conditions and materials to deal with that need to be returned to original condition after the new sprinkler system has been installed. The existing system is divided into four (4) zones or quadrants, with a vertical riser serving the sprinklers in each zone. Only one flow switch is present for each of these zones. It is anticipated that the building will remain zoned in these four (4) quadrants, but flow switches will be provided on each floor at each riser. The construction will need to be phased so as to minimize the floor area that will not be protected by an active sprinkler system. Areas without active sprinkler systems will need to be under a fire watch.