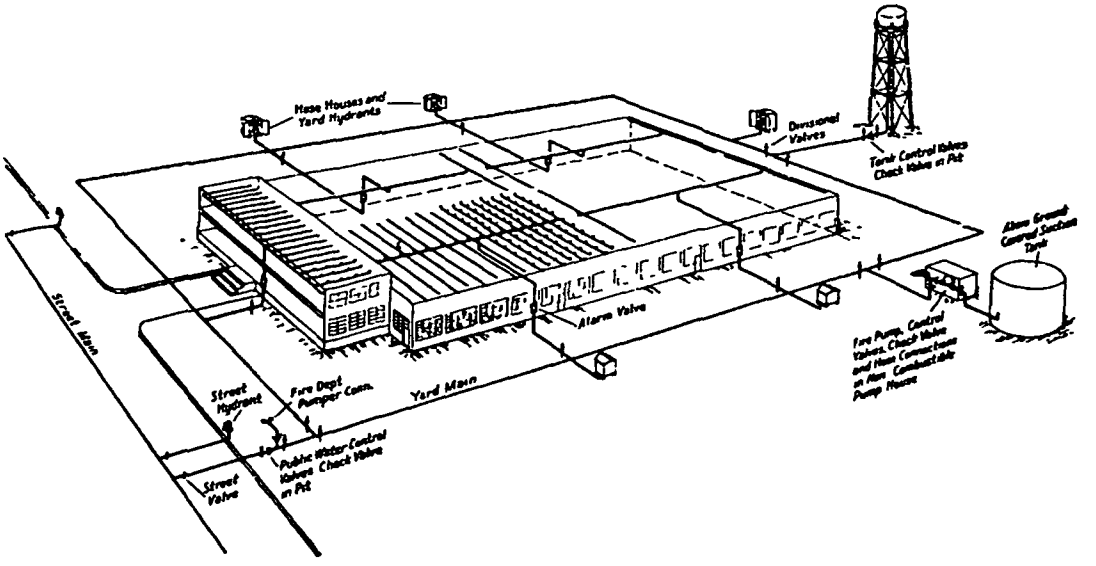

FIG 43–27 —Typical automatic sprinkler installation for a modern industrial facility Note sprinkler systems, yard mains, and water supplies

Courtesy Factory Mutual Engineering Corp

One of the most important tasks involved in keeping fire extinguishers in top condition is periodic hydrostatic pressure testing, a mandatory requirement set forth in NFPA Standard No 10A The occasional reports of injuries and fatalities, due to extinguishers rupturing during operation, should be proof enough of the importance of this requirement

Whether the testing is done by an outside agency or privately, there should be no mass removal of extinguishers from an occupancy A testing program should be established so only a few scattered units are removed at one time They should be tested and returned to service promptly Temporary replacement units or additional protection may be needed when extinguishers are being removed for testing

Water Systems

Water supply and storage

Sprinkler systems need a reliable water supply of ample capacity and pressure for efficient fire extinguishment (Fig 43–27) The water supply should be engineered with the sprinkler protection to provide a hydraulically balanced system at the least cost For example, to supply all sprinklers likely to open in addition to hose streams, a volume of 500 to 3000 gpm (and sometimes more) may be needed The precise need depends on the occupancy classification The pressure requirement will vary, however, it should be high enough to maintain a residual pressure of 15 psig in top-story sprinklers

Water may be supplied from the following sources

1 Public water works underground supply mains

2 Automatically or manually controlled pumps drawing water from lakes, ponds, rivers, surface storage tanks, underground reservoirs, or similar adequate sources

3 Pressure tanks containing about two-thirds water and one-third compressed air for expelling the water into the piping supply system

4 Elevated tanks or reservoirs that depend on gravity to force water through the system

Usually at least two of these independent sources should be available as primary and secondary sources of water to the fire extin-