

FIRE EXTINGUISHMENT AND CONTROL

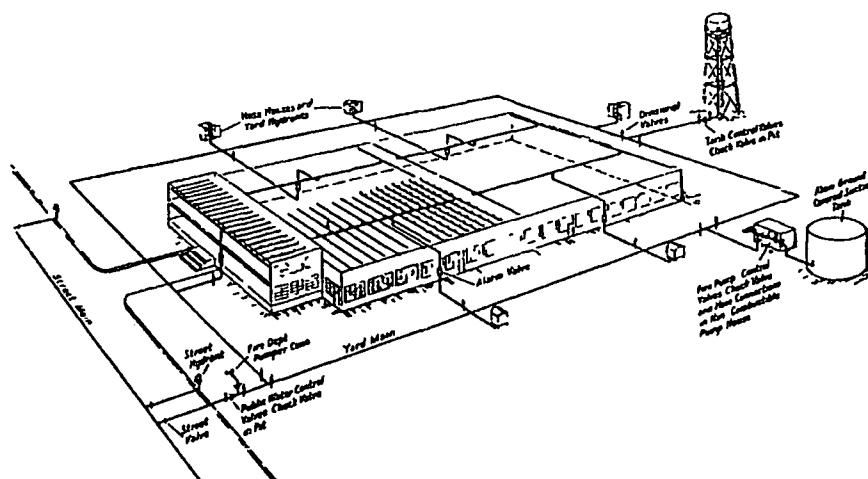


Fig. 34-2. Typical automatic sprinkler installation for a modern industrial plant. Note sprinkler systems, yard mains, and water supplies.

Courtesy Factory Mutual Engineering Division "Handbook of Industrial Loss Prevention"

expelling the water into the piping supply system.

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

At least two of these independent sources must be available as primary and secondary sources of water to the fire extinguishment equipment. In case of fire, the primary source furnishes water to the system immediately; it is reinforced by the secondary source that also supplies emergency protection if the primary source is out of service. The preferred primary source is a connection from a reliable public water works system. Connection should be made to two different mains to provide greater volume and flexibility in case of failure of one water main. The preferred secondary source is a fire pump that can deliver water at high pressure over an extended time. This pump should be located where it will not be put out of service by a fire, and it should have an emergency power supply, independent of the plant system.

Care must be taken that the water connections do not pollute drinking water, especially where emergency supplies are taken from a river or other nonpotable source.

Stored water for private fire protection should not be removed for other purposes. Everyday use of tank-stored water necessitates constant refilling, hence the danger of accumulated sediment circulating into the hydrant and sprinkler system, also the varying water level may shorten the life of a wooden tank or require frequent painting of a steel tank.

Construction and installation of water tanks are beyond the scope of this chapter, however, one basic consideration is mentioned—in freezing temperatures, the tanks should be heated. In support of this consideration, the heating system should be inspected daily during freezing weather, the control valves, weekly, and the entire system (tank, supporting tower, piping, valves, heating system, and all components and accessories), annually.^o To facilitate inspection

^oNational Fire Protection Association, 60 Batterymarch St., Boston, Mass. *Water Tanks for Private Fire Protection*. Standard No. 22. Also see *NFPA Fire Protection Handbook*.