ABSTRACT

Potential fire hazards that arise in directorate building of PPNS-ITS classified as light a fire hazard. Deluge system Sprinkler using smoke detector that was applied to the fire protection system at the Directorate Building of PPNS-ITS. Designed by SNI 03-3985-2000 about the way of planning, installation and testing of detection and fire alarm systems for fire protection in houses and buildings, SNI 03-3989-2000 on procedures for planning and installation of automatic sprinklers for fire protection on buildings and houses, and SNI 03-1745-2000 on procedures for planning and installation of vertical pipe system for fire protection in buildings and houses.

Deluge system Sprinkler is designed in every room, deluge valve that is used is themodel F. Detection and alarm systems will be connected with water as extinguishing media. Piping system material is galvanized, the piping diameter is 4" for the main pipe, 2.5" for the discharge pipe, 1" for branches pipe.

From calculate detector needed to first floor is 26 detectors, second floor is 18 detectors, third floor is 18 detectors. Whereas calculation for sprinkler needed of the first floor is 82 sprinkler, second floors is 71 sprinkler, and the third floor is 71 sprinkler, Water requirement 6240 lit/min, Whereas Capacity for 3 reservoir each is 2250 liter, Capacity of power pump 19.6 hp or 18.2 kw.

Keywords: smoke detector, deluge system sprinkler, water need.