ABSTRACT

PT. IPMOMI is one of the private companies which operates and maintains the coal power station 2 x 615 MW owned by PAITON ENERGY. To support its operation, PT. IPMOMI needs liquid flammable fuel kept in the flammable storage. There is only fire extinguisher system with a sprinkler and 2 dry chemical Portable fire extinguisher, which actually less effective to put out fire caused by oil fuel. Direktorat Depnakertrans RI Pengawasan K3 Penanggulangan Kebakaran said that chemical fire caused by fuel should be extinguished by foam, not water. Thus, an automatic extinguisher foam system or integrated system is needed.

HIRARC can be used to analyze the risk and fire control in the flammable storage. In the construction process of integrated system high expansion foam, we need to determine the capacity of foam generator needed so that the foam resulted can fade a room with 4.6 m tall in 5 minutes; in which the amount of foam solution required by each foam generator can be noted from the specification data foam generator. The total amount of foam required by the system is identified by multiplying the total number of foam generator with the amount of foam solution needed by one foam generator, in which the total amount of foam solution will be the reference in the selection of the proportioner. The total amount of foam concentrate is resulted from the multiplication of the total amount of foam solution, by 25 minute of operation time, with the percentage of foam concentrate. The power to pump can be determined based on the total head losses in the pipeline system.

The extinguisher media in the flammable storage use high expansion foam concentrate 2 ¾% because of the faster extinguish system, which is integrated with the tools such as heat detector, fire alarm control panel, alarm, manual pull station, bladder tank, proportioner, deluge valve, OS&Y gate valve and foam generator. From the calculation, the capacity of the foam generator needed is 730.94 m³/min, the foam concentrate required is 520.49 liter, the water needed is 18406.4 liter and the power of pump motor required is 4.82 hp.

Key words: flammable, foam, integrated, fire, system