Chainarong Kongcharoensuk 2006: A Study on Design and Installation of Fire Detectors in HVAC Room Using Fire Dynamic Simulation. Master of Engineering (Safety Engineering), Major Field: Safety Engineering, Interdisciplinary Graduate Program. Thesis Advisor: Associate Professor Chawalit Kittichaikarn, Ph.D. 53 pages. ISBN 974-16-2092-6

This thesis is a study on an application of fire dynamic simulation program in the case of fire in Air Handling unit (AHU) room in high-rise building under turbulent air flow condition. The data from the simulation program is gathered and examined in order to design, adjust, and install the fire detection equipments to improve the respond time of the fire detection system.

The model created by the simulation program show a heat generated within the turbulent air flow of the room and the performance of the original designed system. It helps to predict if there is a fire within the room and the amount of heat generated is high enough to cause the automatic sprinkle to release water prior to the heat detector installed in the AHU to continue its operation and to suck air and smoke into the area.

By plotting the temperature distribution at the ceiling height, the area where heat accumulated within the turbulent air flow can be located. The results can be used to locate the installation of the fire detection equipment to improve the respond time of the fire detection system.

Student's signature

Thesis Advisor's signature

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