Siraprapa Somwong 2006: Analysis of Fire Occurrence from Cooking Gas in Restaurants. Master of Engineering (Safety Engineering), Major Field: Safety Engineering, Interdisciplinary Graduate Program. Thesis Advisor: Associate Professor Penjit Srinophakun, Ph.D. 75 pages.
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This research aimed to analyses the fire protection of liquefied petroleum gas fire occurrence in restaurants, having gas pipe line connected to the kitchens. According to engineering safety theory and principle, safety guidelines suggested by Fire Dynamics Simulation (FDS) are proposed. The fire caused from the cooking gas leaking was simulated. In this study, fire and smoke distribution were performed. The results of safety system after installing in the restaurant were also studied.

The simulation results of the fire distribution and smoke moving direction in the restaurant (no safety system was installed) revealed that fire combustion was continue and smoke distributed around the restaurant. However, after the 4 sprinkler were installed according to the Engineering Institute of Thailand under H.M. the King's Patronage standard (2545, 2548), the sprinkler worked after 5 minutes of fire and the fire gradually stopped. If 5 sprinkler were installed, heat detector started to alarm and sprinkler worked after 82.4 seconds. Then the gas pipe line was cut off and the fire stopped.

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