

Somkid Buntatao 2008: Effects of Small Foundry Industries to Nearby Communities: Master of Engineering (Environmental Engineering), Major Field: Environmental Engineering, Department of Environmental Engineering. Thesis Advisor: Assistant Professor Narumol Vongthanasunthorn, D.Eng. 116 pages.

This research was carried out to measure the operation of Foundry Industries in Phetkasem 51 Road, Bangkok especially the air pollution system which were complaint by people since 2004 that it has emitted pollutants to atmosphere and community and at present people still complain although the related government agency has been trying to solve the problems. All air measurement in workplace (3 sites), stack and community found that a trend of pollutant has decreased from the past but the problem still exists because it is hard to predict the exact emission concentration. Because all foundry factory's spray tower are low efficiency, CO, TSP and PM-10 level in the community are over the air quality standard so installation of the pack tower is necessary for these foundry factories to prevent the further effects to community though the health risk analysis on people who might expose the pollutants revealed a small risk currently.

The research suggests 3 principle ways for the owner of foundry factory's including 1) improve the efficiency of their present air pollution control system, by maintenance annually and raise liquid to gas ratio to increase liquid pressure for more pollutant capture in gas stream. 2) redesign a new air pollution control system to be a pack column instead a spray tower since a pack column can remove SO<sub>2</sub> and dust in the same time but a spray tower can remove only dust 3) apply integrated strategy: clean fuel usage, tall stack, improvement of combustion process and cooperate among related group.

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Thesis Advisor's signature