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Thesis Title : Improvement of a Dust Removal System in a
Chemical Plant

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Abstract

A study was carried out to determine the performance of a dust removal system in a chemicals manufacturing plant. It revealed that the design and construction of the system did not conform to internationally accepted standards, thus creating a working environment with toxic particulate suspension.

The objective of this thesis is to pin point the flaws in the design of the existing dust removal system, and subsequently to redesign and build a new system in accordance with the ACGIH (American conference of Governmental Industrial Hygienists) guidelines.

Performance studies carried out after the commissioning of the new system showed drastic improvements. It was found that the dust collection efficiency has improved by 2.8 fold and that the concentration of dust particles in the working environment has been reduced to 1/13 of the previous concentration level.