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Authors: S.M. Tauseef, Tasneem Abbasi, V. Pompapathi, S.A. Abbasi

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Case studies of 28 major accidents of fires/explosions in storage tank farms in the backdrop of available codes/standards/models for safely configuring such tank farms

by

S. M. Tauseef¹, Tasneem Abbasi², V. Pompapathi², and S. A. Abbasi^{*2}

¹Department of Health, Safety, and Environmental Engineering

University of Petroleum and Energy Studies

Dehradun 248 007, India

²Centre for Pollution Control & Environmental Engineering

Pondicherry University, Chinakalpet

Puducherry 605 014, India

*Corresponding author <abbasi.cpee@gmail.com>

1

Abstract

Twentyeight accidents involving major fires and/or explosions, which have occurred across the world in tank farms storing flammable liquids, have been studied. The focus has been on determining, a) what were the distances between the tank which failed and the tank(s) which were damaged or could have been damaged due to fire/explosion in the former; b) what were the distances prescribed as safe by prevailing codes/standards/models between the concerned tanks, and c) whether the tanks were relocated in a safer way by the concerned industry after the accident. The study also identifies some of the codes, standards, and models which appear to provide more realistic safe distances for the given tank types/sizes.

Keywords: *Flammable substances; storage tanks; fire; explosions; chemical process industry; safe distances.*

1. Introduction

Chemical process industries (CPI) often deal with hazardous chemicals and/or processes which give rise to the risk of major accidents (Khan and Abbasi, 1998a; Lees, 2005). Even though great advances have taken place in the science and technology of process safety, major accidents continue to occur because of ever-larger inventories handled across the world. There are also more and more new processes being operated under the hazardous conditions of very high/low

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