

Accepted Manuscript

Challenges and reflections on the development of urban refineries in China

Yifei Meng, Xiaoming Yan, Dongfeng Zhao, M. Sam Mannan

PII: S0950-4230(18)30320-6

DOI: [10.1016/j.jlp.2018.08.004](https://doi.org/10.1016/j.jlp.2018.08.004)

Reference: JLPP 3753

To appear in: *Journal of Loss Prevention in the Process Industries*

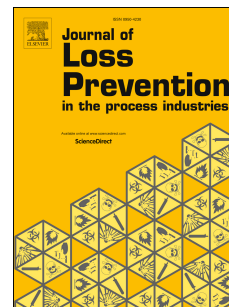
Received Date: 31 March 2018

Revised Date: 25 April 2018

Accepted Date: 3 August 2018

Please cite this article as: Meng, Y., Yan, X., Zhao, D., Mannan, M.S., Challenges and reflections on the development of urban refineries in China, *Journal of Loss Prevention in the Process Industries* (2018), doi: 10.1016/j.jlp.2018.08.004.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Challenges and Reflections on the Development of Urban Refineries in China

Yifei Meng^{a,*}, Xiaoming Yan^{b,c}, Dongfeng Zhao^a, M. Sam Mannan^c,

a. College of Chemical Engineering, China University of Petroleum (East China), myf213@163.com, +86 15806569036.

b. College of Mechanical and Electronic Engineering, China University of Petroleum (East China), jimodejuejiang123@163.com, +86 13626485042.

c. Mary Kay O'Connor Process Safety Center, Department of Chemical Engineering, Texas A&M University.

a. College of Chemical Engineering, China University of Petroleum (East China), zhaodf@vip.sina.com, +86 13905460127.

c. Mary Kay O'Connor Process Safety Center, Department of Chemical Engineering, Texas A&M University, mannan@tamu.edu, 1 (979) 862-3985.

Abstract: Due to urbanization in China, some refineries have been transformed from industrial zones into mixed industrial and residential zones, thus forming a pattern of the refineries encircled by the city. This not only increases the risk burden of the refineries, but also gives rise to strong socially negative public opinions that become a serious bottleneck for the development of the refineries. This paper discusses the challenges faced by urban refineries in China from the aspects of urbanization, provides an overview of the current status of such refineries, conducts an in-depth reflection on China's current policies taking into consideration and proposes technological frames that may be adopted to promote their development. The research defines safety protection distance and health protection zone as well as helps in selection of the development alternatives for urban refineries in terms of whether to make upgrades in-place or to relocate the enterprise to tackle the problems arising from the encirclement of the refineries by cities.

Keywords: Urban refineries; Risks of refineries; Safety protection distance; Health protection zone; Development alternatives for refineries

1. Introduction

The continuous growth of the economy in China and the improvement of its overall national strength have pushed forward its urbanization. With the rapid urbanization in contemporary China along with the irrationality and lack of foresight in zoning and development plans at some regions, many previously remote areas with chemical plants have increasingly become more densely populated. These densely populated areas have become ones with houses, schools, hospitals, hotels, and other residential buildings surrounding the refineries. Subsequently, safety and health protection distances and zones cease to have their effectiveness to the point where the plants cannot meet the relevant regulations in China. As we all know, essentially the operation of a chemical plant induces a potential risk to the lives and the well-being of the people living next environment. The current situation have caused a serious impact on the safety and the

Download English Version:

<https://daneshyari.com/en/article/6972731>

Download Persian Version:

<https://daneshyari.com/article/6972731>

[Daneshyari.com](https://daneshyari.com)