



Consequence Modeling , A New approach and Necessary Tools For Permanent Production

Cases study : South Pars Gas Complete Phases ۲&۳

Condensate stabilization unit and slug catcher

Alireza Nojoumi , Head Of HSE , South Pars Gas Complex
Habibollah Raouf, HSE department, South Pars Gas Complex

Alireza.nojoumi@spgc.ir

Ar.nojoumi@gmail.com

Habibollah.raouf@spgc.ir

hraoufsgc@gmail.com

Abstract

All processes have a risk potential. In order to manage risks effectively, they must be estimated. Since risk is a combination of frequency and consequence (or impact) analysis is a necessary step in the risk management process.

The objective of this article is to review the rang of models currently available for consequence analysis. Some material on these models is readily available, either in the general literature or as part of the AICHE/CCPS publication series.

Consequence modeling is a vital tools direct to permanent production and increases the safety of plant with people who work on it . finding the fire zone , impacted and restricted area of the units , gas train in the gas refinarie and not only in design of the new plant but also through several modification request will be helpful .

Consequence analysis to achieve a conservative result. All models, including consequence models, have uncertainties. These uncertainties arise due to (۱) an incomplete understanding of the geometry of the release, that is, hole size, (۲) unknown or poorly characterized physical properties, (۳) a poor understanding of the chemical or release process, and (۴) unknown or poorly understood mixture behavior, to name a few.

In this lecture , we study who to decreases the uncertainties due to the plant permanent production. A case study related to slug Catcher and condensate stabilization unit in phases ۲&۳ with the



PHAST^{۶.۵۳} soft ware are presented and will be compare with ALOHA soft ware.

This study already has been done in KHANGIRAN gas refinery for the sour gas pipe line more than two years ago by the author and has a good benefit.

Consequence modeling are achievable for all gas refineries in Iran. For permanent production is a necessary tools. This article already has awarded in ghatar gas conference.

Keywords: Consequence Modeling , Toxic gas Release , Fire Zone , Impacted Area , Restricted Area

۱) Introduction

۱- *Category of risk in gas plants*

« frequency* magnitude of consequences»

As the risk is a there are various types of risk they can be classified according to different criteria. Generally speaking, risks can be classified into three categories:

- Category A risks: those that are unavoidable and accepted without any Compensation (for example, the risk of death caused by lightning).
- Category B risks: those that are, strictly speaking, avoidable but which must be Considered unavoidable in everyday life (for example, the risk of dying in a traffic accident).
- Category C risks: those that are clearly avoidable but to which people expose Themselves because they can be rewarding (for example, climbing or canoeing).

So risks are usually classified into three further categories for gas plants:

- Conventional risks: those related to activities and equipment typically found in most gas plants (for example, electrocution).
- Specific risks: those associated with handling or using substances that are considered hazardous due to their properties and nature (for example, toxic or radioactive substances).
- Major risks: those related to exceptional accidents and situations whose consequences can be especially severe as large amounts of energy or hazardous substances may be released during short periods of time.