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# REVIEW ON RISK MANAGEMENT OF PETROLEUM OPERATION

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**Abstract**— This report is an example of an actual risk management approach. It is the case study of major risk modeling within an oil and gas refinery. Risk management is a new discipline that focuses on identifying, analyzing, monitoring and controlling all major risk. The purpose of this paper is how the risk management member are work on operational hazard and how they control the situation and what are the major steps followed by the refineries. In this paper we discuss what is likely happen. This paper is the justification of some area of operational risk in refineries.

**Keywords**— Petroleum industries, risk, hazard, risk management, petroleum operation.

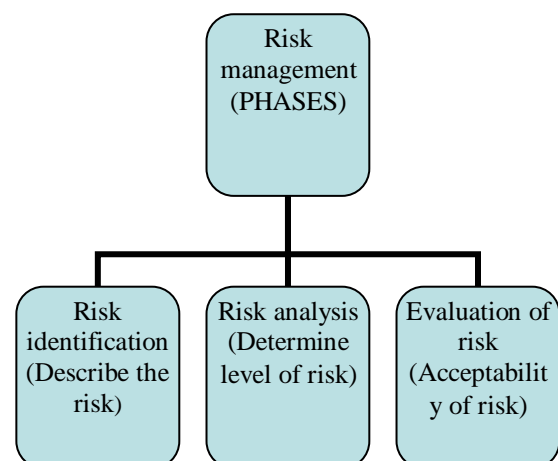
## I. INTRODUCTION

In these days, the industry was highly affected by hazard, health crises and natural disasters. (1) These incidents have a ad impact on economic activity. An accident in petroleum industries is a major issue. It cause environmental pollution and a major economic losses because of the high risk of petroleum operation. According to this risk management is very important for petroleum industries. It is the top priority of the industries to establish the risk management system and risk management team. (2-3)Risk is defined as events whose unfavorable conditions are difficult to accept or are even unacceptable. Risk management is a management method controlled by a team to identify, measure and analyze risk and basis to deal with risk, to achieve maximum security at minimum cost. (4,5,6,7) In recent years, with the continuous development in industries, risk analysis theory and risk analysis method are developed day by day and many petroleum industries pay more attention to risk management, and more effort to minimize the risks, and risk management has been used as an important component of petroleum industries.(6,7,8,9) Now a days the combination of theory and practice of risk management content and risk analysis method of oil industries are constantly developed.

## II. LITERATURE REVIEW

Principle of risk management- the minimization of unfavorable organization is suffered. The complete process of understanding risk, risk assessment, and decision making to ensure effective risk controls are in place and implemented.

- i. The main aims of risk management –
  - a) To identify major risks alarming.
  - b) Refineries work on risk management in their important plan and its implementation.
- ii. Phases of risk management-
  - a) Identifying the hazard
  - b) Measure the associated risk
  - c) Controlling the risk



- Identification of Hazards as a management team by paying attention to industry activities and plant



operations will be the identification of hazards. A company's management team will compile the data and, in the result of these data the team will decide what needs to be considered according to the risk analysis. There are a variety of tools available for hazard identification – for example, Hazard and Operability Study (HAZOP), What-If Analysis, Checklist, Fault Tree etc

➤ Measure the associated risk-Many company managements have prepared a risk chart describing what is a low-level risk (acceptable), medium-level risk (acceptable with certain conditions), and high-level risk (unacceptable). Such substances are helpful to clarify to employees what they must do and what is acceptable by the employees. The low-level risks are usually acceptable without any involvement of management or they control these as per their own risk. With respect to medium risk, management needs to be actively involved to check the risk is kept under control. While for high level risk some norms or rules made for the control of these hazards.

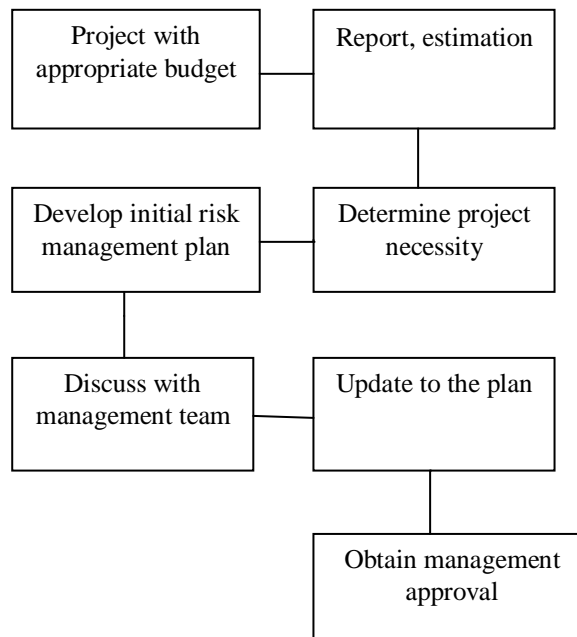
➤ Controlling the risk- If the risk reduction measures, then the necessary changes must be made to equipment, procedures, hazardous inventories, etc. It is important to note that once a change is done, the risk management cycle is once again used to describe some new hazards and risks. Some strategies for risk controlling

**Risk Avoidance** – This strategy involves serious decision on the part of the organisation to avoid completely a particular risk by discontinuing the operation producing the risk e.g. the replacing a hazardous chemical by one with less or no risk potential.

**Risk Retention** – The risk is retained in the organisation where any consequent loss is financed by the company

**Risk Transfer** – This refers to the legal decision of the costs of certain losses from one party to another. The most common way is by insurance.

**Risk Reduction** – Here the risks are measured, according to the hierarchy of risk control described in earlier sections.



Steps of risk management team work

### III. FUTURE SCOPE

We have made several programmes for other organizations to consider with the focus of advancing risk management education, training, and practice. We are personally prepared to assist in this process, and are confident that our colleagues are fully prepared in risk management education and practice would also be willing to contribute. According to my view few month training on risk management should be provided in our degree programme that help us to understand about the hazard before we face it. And some more motivational seminar organized by the youths to provide awareness among the uneducated workers who work in the industries. Company should also organize this for people.

### IV. REFERENCES

1. "Risk management on petroleum operation" Zhang Yanting, Energy Procedia 5 (2011) 2330–2334
2. " Risk management – an area of knowledge for all engineers" Paul R. Amyotte, Mc Cutcheon, 3-10 oct 2006
3. "Risk management" Jeffrey Lee Cowherd, 1.
4. "Analysis of Risk Management Practices in the Oil and Gas Industry in Ghana.



Case Study of Tema Oil Refinery (Tor)” Osabutey, D ,  
Vol.5,138-140, 2013

5) “The petroleum engg. Handbook- Sustainable  
operation”, M.R.ISLAM, M.I. KHAN, 1<sup>ST</sup> FEB 2008

6) “Control, procedures and Risk( securities institute  
operations management)”. David loader, 25<sup>th</sup> Sep 2002

7) “Health, Safety and Environmental Management in  
Petroleum and offshore Engineering” Prof. Dr. Srinivasan  
Chandrasekaran Module No. # 01

8) “Risk assessment & management” EPIC,4-10

9) “Environmental Technology in the oil industry”,  
Orszulik,Stefan,Ed 01, 1-15

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