

Information about health and safety at work, Fire Risk Management in Oil industries

Información sobre salud y seguridad en el trabajo, Gestión de riesgos de incendio en las industrias petroleras

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ABSTRACT

Fire in the oil industry, is the greatest danger that can lead to the complete disappearance of part of the work environment. In addition, the risk of mortality and loss of life and financial staff is also a plus. In this regard, it is necessary to carry out fire risk management process to minimize the damage caused by the fires in the petroleum industry organizations and centers. This study is the first to introduce and identify fire risk management are discussed, then with the benefit of methods and techniques for risk identification and implementation of appropriate preventive measures to eliminate or reduce fire accidents, increase safety factor provides.

Keywords: risk management, fire, safety, risk analysis

RESUMEN

El fuego en la industria petrolera es el mayor peligro que puede llevar a la desaparición completa de parte del entorno laboral. Además, el riesgo de mortalidad y pérdida de vidas y el personal financiero también es una ventaja. En este sentido, es necesario llevar a cabo un proceso de gestión de riesgo de incendio para minimizar el daño causado por los incendios en las organizaciones y centros de la industria petrolera. Este estudio es el primero en presentar e identificar la gestión del riesgo de incendio; luego, con el beneficio de los métodos y técnicas para la identificación del riesgo y la implementación de medidas preventivas adecuadas para eliminar o reducir los accidentes de incendio, aumenta el factor de seguridad.

Palabras clave: gestión de riesgos, incendios, seguridad, análisis de riesgos.

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Introduction

Having a risk-free life is always hope and human purpose and a desire for safety and security needs of all human beings forms integral part of the nature. So, from the beginning human are faces with the risks and problems. On the other hand, humans are always trying to improve living conditions and welfare has tried with the change in the nature and variables, the environment and the world to serve its own ends. In this way the man with the acquisition of materials, equipment, machinery, devices and the general term embracing new technology as well as serious and more serious risks and risks from has become the simple and traditional to more complex shape.

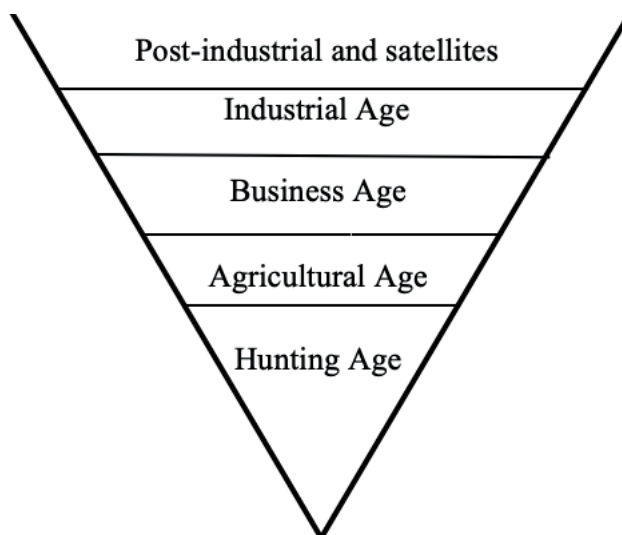


Figure 1. The level of complexity hazards

So, with an approach to the evolution of human life and the risk pyramid can be traced that the center of gravity towards the bottom of the pyramid, and each part of the pyramid represents the level and complexity of space hazards. So primitive human life based on hunting until the evolution of agriculture, trade and industry and post-industrial risks facing is enormously complex. The most important feature of the present century, which is capital accumulation and technological risks and natural hazards increase the importance of risk management ads. It is observed that managing the risks and dangers and hardships to the safety and balance and secure environment to ensure that the organization's survival and life duties, particularly managers and risk managers in an organization.

The risk management process

The occurrence of any fire in the fields of chemical and physical needs is the place. Factors contributing to this are numerous, but essentially fires to create fire three factors that are essential to the well-known fire triangle and the elimination of only one of them may not continue to fire (Parastoo, 2014).

1. Oxygen, 2. Burnt material, 3. Heat

Generally, risk as the risk or likelihood of an adverse event can be expressed. Finds are specific risks in the risk assessment process definition. In the process of combining the concept of risk, or the risk of multiplying the frequency of occurrence of a risk is identified and the magnitude of its consequences (Risk and insurance 2015). Risk management is to plan, organize, and analyze the detection and control of economic life in all aspects of property all risks, threatening and limiting the reliability and profitability of the organization (Risk management, 2016). Strategic risk management is the core of any organization. Risk management is the process by which organizations to intelligently and methodically risks associated with activities in the past, present and future activities of the organization to recognize surrounds. Foundations of Thought and risk management requirements are based on scientific intelligence because scientific consciousness which considered against common

sense based on a series of infrastructure and basic principles are as follows: That distinguishes this thinking (scientific sense) is against common sense that make up the foundations of risk management thinking (Moeini, 2013).

Scientific intelligence	Common sense
Accidents are in captivity of man.	Man is in captivity of accidents.
Scientific consciousness before the accident, the remedy.	Common sense after the event, the remedy.
Scientific understanding is above active.	Common sense is passive.
Scientific consciousness, do not let bad things happening.	Common sense, let bad things happening.

Table1. Differentiation of scientific intelligence with conventional levels of risk management perspectives (Moeini, 2013)

So, risk management is based on the philosophy and ideology of scientific intelligence from the disaster is and allow the emergence of risk do not give up wanting to have an answer for them. The risk management process involves a three-step process is as follows:

- A) Risk identification, B) Analysis and risk assessment, C) Risk control

Risk identification

Risk identification to determine that an organization faces uncertainty level is done. To this end the threat of fire hazard identification and factors that makes resources with face serious risks by resorting to techniques and different skills performed the most important of these techniques include methods of public information, physical inspection, Czech impairment tree List, Preliminary Hazard Assessment PHA, checklist, etc. The purpose of risk identification, gathering information on vulnerability sources and types of damages caused by that institution is exposed. This information should be classified as a database (Majid, 2011). Obviously, this information is needed about the risks described can be produced from sources within the organization and resources outside of the organization. To learn more about the two methods that are applicable to the industry will be discussed (Risk management, 2016).

Methodology

Fault tree

The method as one of the most powerful analysis tools and is immune recognition system (Risk management, 2016). The names of the methods and systems of the general deductive reasoning in general are very fine and detailed components and physical and functional interactions between components. For example, this method can be used to identify fire risks stepped (Moeini, 2013)

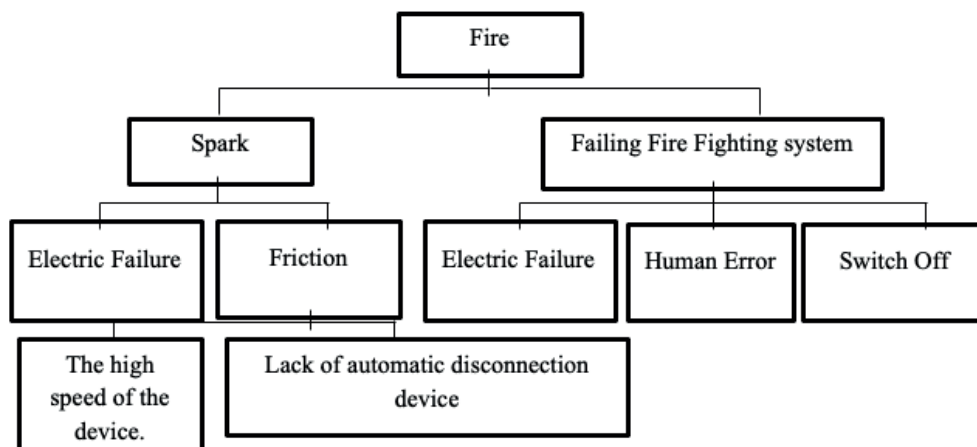


Figure 2 Fault Tree

Primary hazard analysis

PHA techniques usually first attempt in system safety analysis process to identify and classify potential hazards associated with operating the system (Applied Safety and Performance Indicators in Industry, 2012).

Precarious situation	Cause	Impacts	Level of risk	Assessment	Suggestion
Group Risk	What's the problem reason?	What is the impact of the accident?	Level of Hazard	Probability	Recommendations for risk control

Table 2. Hazard analysis

Analysis and risk assessment

Risks and hazards were identified after the turn of the measure and assess the risks and impact of risk on the organization's activities (Applied Safety and Performance Indicators in Industry, 2012). As we know, one of the definitions of risk is a combination of both probability and severity of risk (R=P.S).

Frequency	Catastrophic and Critical	Average and boundary	Very minor
Repeated			
Occasionally			
Rarely			

Table 3. Risk Analysis table

So, measuring risk in two important aspects of repetition and frequency of accidents and the relative frequency of events (Frequency) and severity level and risk adverse effect on the financial situation of the organization and its activities are done (Kazemi, 2010). The risk analysis can be found by careful study of past events, the probability of accidents and the estimated impact them in the future and decision criteria can be explained in physical planning and financial risks (Moeini, 2013).

Risk control

After identifying and analyzing hazards, turn to explain ways to plan and deal with hazards which is important given that the issue in this part of the risk management process is logical and economical control over the frequency and severity of each risk guidelines certainly make the difference (Moeini, 2013). Then the potential risks to the economic estimates must be based on the frequency and degree of impact indicators and the destruction can be provided of the risks and financial planning, risk assessment (Safety & Health Requirements).

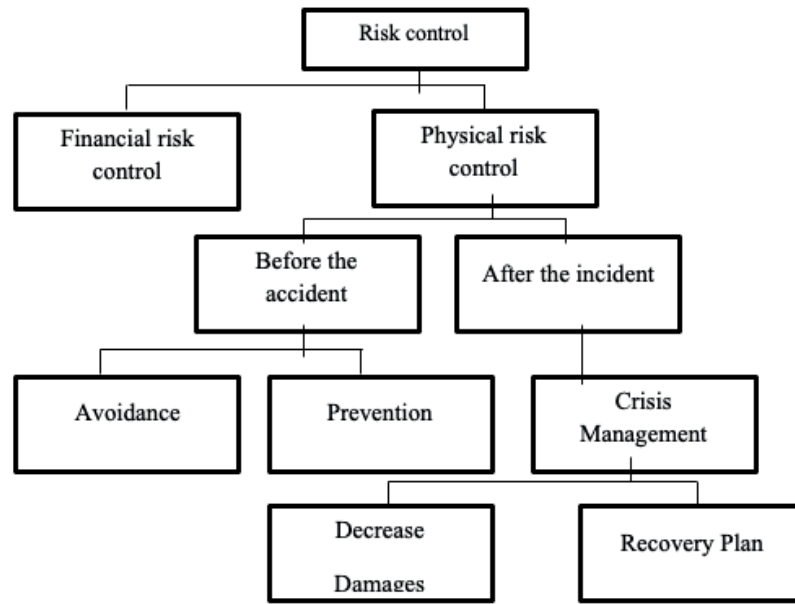


Figure 3. The chart of Planning and decision-making in the face of risks

Frequency	Catastrophic and Critical	Average and boundary	Very minor
Repeated	Risk transfer to insurance companies	Transferring the risk to the insurance company	Risk transfer through insurance fund
Occasionally	Risk transfer to insurance companies	Risk transfer through insurance fund	Own insurance
Rarely	Risk transfer to insurance companies	Own insurance	Own insurance

Table 4. Financial planning methods of risk

Result and Discussion

Perhaps more than any other time of the ages or centuries, discussion on the implementation of the risk management process industries and organizations have a special place so safety and the desire for stability and survival, and the system is the bedrock of any system based on the findings of Maslow (behavioral scientist and psychologist) In the hierarchy of human needs is known as a basic human need and the desire to secure the safety and except in the light of decision-making, planning, organizing, Directing and controlling all risks to the reliability and survival is not allowed. Therefore, in this article all the techniques and skills that safety and prevention experts to assist in identifying risks including loss of trees, tables and presented preliminary risk. The intensity and frequency of analysis and experience, and risk analysis and accident records for this analysis can be accepted up to number the impact of the accident and then the financial burden accident and logical control and economic tools necessary measures pursued.

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