

**STUDY OF MAJOR INCIDENTS IN OIL AND GAS INDUSTRY- KUWAIT AND POSSIBILITIES OF EFFECTIVE IMPLEMENTATION IN INCIDENT REPORTING AND INVESTIGATION SYSTEM"**

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**Abstract:** The purpose of this study was to develop and implement formalized incident reporting, investigation, and analysis procedure for use at the Oil and Gas Industry-Kuwait, and answer the five research questions created for this study. In order to develop and implement these formalized procedures and answer the study's research questions, a review of literature was performed which presented the researcher with industry's best practices and guidelines to follow in connection with incident reporting, investigation, and analysis. A questionnaire was then developed and given to Oil and Gas Industry-Kuwait employees who are knowledgeable, involved, and have experience with incident reporting, investigation, and analysis and the safety management system employed at Oil and Gas Industry-Kuwait. The questions generated for the questionnaire were aimed at answering the five research questions and allowing the participants to express their perspectives of Oil and Gas Industry-Kuwait's current incident reporting, investigation, and analysis procedure.

After the reviewed literature and questionnaire responses were analyzed, the study found some concerning issues and deficiencies with the procedures for managing incidents currently employed at Oil and Gas Industry-Kuwait. The major findings of the study include a number of issues concerning communication and reporting barriers that were identified at Oil and Gas Industry-Kuwait which might inhibit employees to report incidents, improper implementation of reporting procedures and the lack of proper compliance with formalized incident investigation and incident analysis procedures. The recommendations made for this study can provide opportunities to address these deficiencies and help in developing these needed formalized procedures.

## 1. Introduction

Historically, The OIL AND GAS INDUSTRY-KUWAIT experiences very high rates of loss due to the occurrence of workplace accidents and injuries. Oil and Gas Industry-Kuwait is in a position to move away from the traditional norm and understands the benefits and impacts of proactively managing losses by which accurately reporting, investigating and analyzing incidents can have on an organization.

The Oil and Gas Industry-Kuwait incident reporting, investigation and analysis procedure has an opportunity to be improved. Employees are apprehensive to report incidents to management. Investigations are performed, but could be more effective in identifying the incident's root cause and the breakdown in the management system. Oil and Gas Industry-Kuwait realizes and understands that there is a disconnect between their current procedure for managing organizational exposures and the desired outcomes which they wish to achieve.

For both the organization and its employees, incident investigations can serve as a valuable tool; however it is often perceived as a means to place blame on an individual (Manuele, 2003). The overall objective of an incident investigation is to relieve the chain of events leading up to the incident in order to eliminate and prevent the reoccurrence of employee injuries and illnesses, motor vehicle accidents, and/or damage to property. When performed correctly, "a thorough accident investigation will often help show concern for employees, prevent repeat accidents, identify root causes, address liability issues, expose errors in processes, identify and eliminate hazards, decrease worker compensation costs, correct unsafe acts and conditions, aid in crisis planning, and provide information to make recommendations"

An emergency plan is an informative document, which acquaints the occupants of a factory or an occupancy with procedures to be implemented, during an emergency. It details standard operational guidelines to emergency controllers and their personnel, who may be required to fulfil a key functional role, during the various stages of an emergency. In other words, it contains critical information, which can assist emergency services personnel to formulate appropriate incident management strategies and tactics, when attending on an emergency at a plant. Since it is a critical document in implementing appropriate management strategies, it is important that the plan is comprehensive and easy to read and use.

Each works shall formulate an emergency management plan, detailing explicitly what action will be taken in the event of a major accident occurring on site, to prevent further escalation and to ensure rapid control. The emergency planning within the factory premises is known as On-Site Emergency Plan. This article will deal with the details of On-Site Emergency Plan.

## **2.Purpose of the Study:**

The intention of this study was to develop and implement formalized incident reporting, investigation and analysis procedure to serve Oil and Gas Industry-Kuwait as a valuable tool for preventing the reoccurrence of losses. The study established the necessary procedures of performing an effective investigation, determining the root cause of an incident, and addressing the issue with the development of adequate corrective actions. This study also discussed the barriers of reporting incidents and strategized ways to promote and encourage employees to become more involved in the reporting process.

## **3.Objectives:**

- 1.what are the different types of major accidents and nearmisses that occurred at Oil and Gas Industry-Kuwait in the recent past and what are the lessons learnt from past incidents “?”
- 2.In which manner incidents are reported and investigations are conducted at Oil and Gas Industry-Kuwait and are they effective in providing sufficient data/information regarding the incident?
- 3.What are the communication barriers at Oil and Gas Industry-Kuwait,that interrupting the employees to report workplace incidents, and how can Oil and Gas Industry-Kuwait combat these incident communication reporting barriers?
- 4.What different methods or techniques are considered to be industry best practices with regards to conducting an incident investigation and reporting at Oil and Gas Industry-Kuwait ?
- 5.Why incidents are re-occurring even after having standard procedures and methods? What are the possibilities of effective implementation in incident reporting and investigation system?

## **4.Methodology**

The research methods selected to conduct this study include a review of literature focusing on incident reporting, employee involvement, organizational communication, reporting barriers, incident investigation, loss causation, and incident analyses, an evaluation of Oil and Gas Industry-Kuwait's current procedure for reporting, investigating, and analyzing incidents, and surveying Oil and Gas Industry-Kuwait employees. The literature review gathered relevant information on this issue by establishing the procedures to follow when performing investigations and analyzing the results of the data. Evaluating Oil and Gas Industry-Kuwait's existing procedures for addressing incidents determined deficiencies and helped in creating solutions for reducing and preventing losses caused by incidents. Lastly, a questionnaire allowed the participants to express their perspectives of Oil and Gas Industry-Kuwait's current incident reporting, investigation, and analysis procedure.

- 1.Incident reporting
  - HSE LIVE reporting.
- 2.. Accident Causation model
  - Swiss cheese model
- 3.Incident and Root cause analysis.
  - Comprehensive List of causes.
  - 5why analysis
  - Cause and effect analysis
  - Fault tree analysis

Identifying a near-miss event;

- Having a system in place which allows an employee to report the near miss event;
- Prioritizing near miss events based on their potential severity;
- Providing information to those analyzing the causes;
- Investigating the near miss to identify it's basic and root causes;
- Identifying corrective solutions for each identified cause;
- Communicate the corrective solutions to those who will implement them; and
- Tracking the implementation of the solutions and monitoring their effectiveness

The 5-Why's is a problem solving method which allows you to get to the root cause of a problem fairly quickly by repeatedly asking the question Why. Although five is a good rule of thumb, fewer or more may be needed. However, there becomes a point where the problem is no longer reasonably Actionable.

5-Why's analysis is a team-based process similar to brainstorming, designed to progressively probe The lower-tier causes of each potential cause. Using the tool is relatively simple:

You first identify the problem statement

Then ask Why the problem occurred (include multiple potential reasons if possible)

Continue asking “Why” for each potential reason until the answers are identified as Actionable root causes (stop when the answers become “unattainable” )

It was concluded that Oil and Gas Industry-Kuwait's incident reporting procedure was adequate but need effective implementation. The procedure was established and found that it offered multiple ways for employees to report workplace incidents to upper management.

The study found that Oil and Gas Industry-Kuwait's incident reporting procedure was established and offered multiple ways for employees to report workplace incidents. However, it was concluded that a number of incident communication and reporting barriers which inhibit employees to report workplace incidents currently exist and there is a lack of reporting occurring at Oil and Gas Industry-Kuwait.

The findings suggest that incidents need to be reported in order to gain valuable information so that an appropriate incident response can be made and an investigation be conducted. The reporting of incidents is the method which enables an organization to begin taking the necessary steps towards abating and preventing an incident's reoccurrence. Failure to report an incident prevents these steps from being made and leaves an organization uninformed.

From the lack of reporting occurring at Oil and Gas Industry-Kuwait, it can be concluded that employee involvement is deficient with regards to reporting workplace incidents. The incident reporting process is dependent on employee involvement. Without the involvement of employees and their contribution to the incident reporting process, the organization will not know that an issue is present and the incident will have the potential to reoccur. An opportunity to understand why the incident occurred and the chance to develop solutions to prevent or mitigate the incident will be missed.

It can be concluded that Oil and Gas Industry-Kuwait lacks in having established, formalized incident investigation and incident analysis procedures.

It was concluded that an effective incident investigation procedure consists of an objective evaluation of all the facts, opinions, statements, and other related information regarding the incident. This evaluation of the incident is then used to formulate a plan to prevent or control a similar recurrence.

The findings suggest that an investigation entails detailed documentation and requires those conducting the investigation to possess strong problem solving skills. As a result, the incident investigation process requires an individual or team of individuals that have a clear understanding of the work procedures and are familiar with loss causation and investigative techniques. Therefore, it can be concluded that investigations are best performed by supervisors assisted by safety professionals, knowledgeable employees, or even outside resources.

## **6. Conclusion**

It was concluded that an effective incident analysis procedure will allow an organization to identify the conditions which increased the risk of an incident to occur, thoroughly assess the situation, prioritize decisions, and implement corrective actions. Furthermore, it can be concluded that the result of an ineffective incident analysis makes it unlikely that the right solutions will be identified and implemented.

## **7.0 Reference**

- What Went Wrong? Trevor Kletz
- Motivation at work: Making an offer they can't refuse –Davids,M
- A conceptual framework and practical guide for assessing fitness-to-operate in the offshore oil and gas industry Mark A. Griffin | Melinda R. Hodkiewicz |
- A system of safety management practices and worker engagement for reducing and preventing accidents: An empirical and theoretical investigation Jan K. Wachter | Patrick L. Yorio
- Esposito, P. A. (2001). Safety and health management systems assessments. The Compass, 1 (1),1-8. Retrieved from <http://www.asse.org>
- Hilden, J. (Eds.). (1996). Workplace safety in action: Accident investigation in the workplaces.
- Neenah, WI: J.J. Keller & Associates, Incorporated.
- Williams, J. H. (2008). Employee engagement: Improving participation in safety. Professional Safety, 40-45. Retrieved from <http://www.asse.org>
- Williams, J., &Geller, S. (2008). Communication strategies for achieving a total safety culture.Occupational Hazards, 49-51. Retrieved from <http://occupationalhazards.com>
- Williams, L. (2008). The value of a root cause analysis. Retrieved from <http://www.ltlmagazine.com>
- Wilson, L., McCutcheon, D., & Buchanan, M. (2003).Industrial safety and risk management.