International Journal of Management, IT & Engineering
Vol. 9 Issue 02, February 2019
ISSN: 2249-0558 Impact Factor: 7.119
Journal Homepage: http://www.ijmra.us, Email: editorijmie@gmail.com
Double-Blind Peer Reviewed Refereed Open Access International Journal - Included in the International Serial Directories Indexed & Listed at: Ulrich's Periodicals Directory ©, U.S.A., Open J-Gate as well as in Cabell's Directories of Publishing Opportunities, U.S.A

A COMPARATIVE ANALYSIS OF THE OIL AND NATURAL GAS CORPORATION LTD AND THE INDIAN OIL CORPORATION ON HEALTH AND SAFETY MANAGEMENT RELATED TO ENVIRONMENT

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ABSTRACTS

The goal of this research is to examine the significance and current status of health and safety management in the companies sampled. Two public corporations, the Indian Oil Corporation and the Oil and Natural Gas Corporation, have been chosen for this study. At an early point, a total of 27 companies are being evaluated for research purposes. This cluster of companies is made up of both public and private companies. Since both the sampled companies play a vital role in India's refinery industry, two sampled companies are purposely chosen. So the public corporation was selected by the researcher for the purpose of sampling so only 9 companies were available for the purpose of sampling. This analysis is a comparative study that involves a minimum of two firms. 2 firms, namely Indian Oil Company and Oil and Natural Gas Corporation, were purposely chosen from the point of view of easy data availability.

Key Words: Environmental safety, Human Health, Indian Oil, Natural Gas

INTRODUCTION

On 25 March 1911, at the Triangle shirtwaist factory in New York, 146 female garment factory workers died in a fire. The key explanation behind this

accident was that the factory lacked adequate exits and only one stairway was locked at that time. More than 4000 people were killed by a methylisocyanate gas leak from the Union Carbide Plant in Bhopal City in 1984, the world's worst chemical disaster. In June 1993, another factory tragedy occurred at the Kader industrial factory in Bangkok, where 189 women died as a result of a fire. Owing to closed exits, employees were stuck and regulatory controls were ineffective.

The explosion of the Deepwater Horizon drilling rig refers to the explosion and subsequent fire on the Deepwater Horizon semisubmersible Mobile Offshore Drilling Unit (MODU) on April 20, 2010, killing 11 employees and injuring 16 others. The explosion caused the burning and sinking of the Deepwater Horizon, resulting in a major Gulf of Mexico offshore oil spill, considered the world's largest accidental underwater oil spill, and the largest environmental tragedy in U.S. history.

On 25 August 2012, an explosion at the Amuay oil refinery, which is part of the Paraguana Refinery Complex, triggered by the ignition of a leaking gas, killed 48 people, mostly National Guard troops stationed at the plant, and injured 151 others.

According to the NORA Oil and Gas Extraction Council report; in the US, 648 oil and gas extraction workers were fatally injured on the job during 2003-2008, resulting in an occupational fatality rate of workers and employees employed in wholesale trade, production of textile mills, manufacture of plastic, insurance, real state, personal services, or printing and publishing are exposed More than 80,000 chemical products are sold on a daily basis every year (Enander, Gute, Cohen, 313). Recorded releases of 522 chemical compounds during 2001 indicate that more than 750 million tonnes of chemical compounds were leaked into the air, more than 100 million tonnes were discharged into surface water and more than 1500 million tonnes were released into the ground solely in the United States, according to the United States Environmental Protection Agency Toxic Release Inventory.

Asbestor, ammonia, arsenic compounds, heavy metals (such as chromium, mercury and lead), pesticides (such as malathion) and solvents (such as xylene, benezene, acetaldehyde, and derived compounds) are among the 522 chemical compounds included in the list, only to name a few.

The current job-related health and safety figures show that 2 million workers suffer from illness they think was caused or made worse by work, with around 30 million days (1.3 days per employee) missed per year due to ill health or disability related to work. About 24,000 employees are injured every eight hours of work and almost 17 workers in the United States are killed on the job every day (OSHA, 2007). 3277700 non-fatal injuries and 4340 deaths occurred in 2009 (Bureau of labour statistics 2009). The total cost of these accidents and deaths is $170 billion a year (OSHA,2008). An approximate $1330,000 per death and $53,000 per disability injury is estimated by the National Safety Council (National safety council, 2009). The International Labor Organization (ILO), which works in the interest of workers, supports the notion that the point of view of workers needs to be taken into account and given equal status in ensuring sound business growth with those of other stakeholders in the workplace. The ILO reports that the cost of ill health and injuries related to work is 4% of the global GDP, or $1.25 trillion. Bennet(2002) argues that workers are living human beings, unlike instruments or objects of production, who need to be interested in improving working conditions and should engage in issues affecting their livelihoods at all levels, including international levels. The experiences of workers in the design and implementation of occupational health and safety policies need to be addressed (Bennet, 2002). Work-related ill health, accidents and injuries in any economy, whether developed, developed or under developed and employers, as well as individual workers and their families who feel the personal effect of work-related health and safety problems, an impact that can be felt long after the incident. As a consequence, an increased number of fatal and nonfatal illnesses and diseases and increased threats to morality from occupational exposure are now a fact.

In health statistics publications, workplace prevalence and occurrence rates have become prevalent indicators, whereas occupational diseases such as

chronic pulmonary diseases, ischemic heart disease, myelodysplasia syndromes or malignant neoplasms are routinely reported.

Industrial economies, even with the labour force, suffer from the burden of environmental hazards.

Meaning of Health

Before understanding the importance of health and safety management it is essential to understand the exact meaning of these words.

Health can be described as a complete state of physical, mental and social well being. Sometimes it can be defined as an absence of disease. But in real the scope of health is broader than it. It is the product of the individual's contact with his environment. When a person in his environment is well adapted, he can be considered healthy. In order to research industrial health, the fundamental goal is to predict future hazards and preventive steps rather than curative intervention. It is basically the business operating environment in which accident-free production is achieved. Generally, accidents mean that material is spoiled or someone is injured when equipment or instruments are damaged. Accidents can often not lead to personal harm, but people are subjected to a hazardous condition in all cases. It is therefore important that engineers, chemists and personnel officers think and recognise areas of potential hazards and establish control measures to avoid hazards.

Importance of Heath

An integral part of the health management system is occupational health. The interrelationship between work and health is concerned. Occupational health is characterised as occupational health prevention (ABOHN,2003). Among its operations, occupational and workplace threat identification, regulatory enforcement assessment and crisis management therapy are included (ABOHN,2003). Among the duties of occupational health professionals are: (1) employee health supervision, (2) pre-placement health evaluation, (3)

regular health assessment, (4) health education, (5) environmental surveillance, (6) employee counselling, recovery and rehabilitation, (7) employee health data record keeping. Occupational health professionals are also expected to be able to identify workplace hazards, such as exposure to infections, chemicals, allergens, irritants and hazardous waste (Dixon, 1984).

RESEARCH METHODOLOGY

Two forms of sampling, Stratified Sampling and Deliberate/Purposive sampling, were mainly used in this study. Technically, all kinds of sampling, i.e. probability sampling, and non- probability sampling, can be said to have been used in this analysis.

A total of 27 oil and gas refining firms have been chosen as the study universe. These corporations are further graded as (1) public companies and (2) private companies in two groups.

As the analysis was focused on public corporations, private firms are left. After that only two firms were purposely chosen for the report. In the following process, for the fulfilment of research questions, total

Of each organisation sampled, 92 employees and managers were chosen. These 92 participants are used for the collection of data.

The entire scope of the study was covered by private and public sector oil and gas companies in India. A total of 27 oil and gas companies in India operate in both the public and private sectors. Of these companies, only 9 belong to the public sector, and the remaining 18 belong to the private sector.

For any form of analysis, public firms are usually more useful. Public companies are ideally suited to study from the point of view of health and safety compliance, since health and safety regulations are mandatory in public companies. The calculation of health and safety instruments is also much simpler for public companies than for private companies.

RESULTS AND DISCUSSION

A total of 92 workers and managers from each sampled organisation were selected to respond to research question one. For research question one, a standardised questionnaire was prepared by the investigator. 7 sections and 46 variables are used in this questionnaire. Health and safety management is technically considered in the first section with demographic characteristics and in the remaining 6 sections. Section A has 9 variables, namely (1) The protection and wellbeing of their workers is the priority of management (2) The personal protective equipment such as safety shoes, helmets, goggles, gloves, etc. that are helpful in healthy working are often available (3) The company organises health and safety training programmes after acc acc. (8) Follow-up activities after incidents and injuries (9) The workers are pleased with the inspection and follow-up procedures used by the management.

Section B called 'Compliance with safety regulations' has 8 variables as (1) the safety committee meetings are conducted at regular intervals (2) Sufficient number of supervisors are named in the workplace (3) There is a reasonable monitoring system for the supervisor to report incidents (4) The workplace housekeeping/cleaning is satisfactory (5) Workers and employees are happy witnessing the accidents (4)

(6) The Occupational Health and Safety Research Centre (OHSRC) has been set up within the organisation. (7) Services provided by the Research Centre for Occupational Health and Safety. (8) Appropriate steps have been taken in a timely manner with respect to concerns posed relating to health and safety.

TEST OF HYPOTHESIS

H_{01}The Indian Oil Corporation has not more effective employee health and safety initiatives than the ONGC.

For implementation of this hypothesis a structured questionnaire was formed up with 9 variables namely:

1. The priority of management is the safety and health of their workers.
2. Personal protective equipment such as safety shoes, helmets, goggles, gloves, etc. that are useful for safe work is often available.
3. After accessing the needs of the workers, the health and safety training programmes are coordinated by the company.
4. At regular intervals, there is the practise of safety audits and inspections.
5. The professionals conduct safety audits and inspections.
6. The company's Protection Committee plays a major role in the organisation.
7. Before an incident / injury occurs, management is involved in health and safety.
8. Follow-up steps have taken place following injuries and events.
9. Employees are pleased with the management's inspection and follow-up procedures used.

In the 5 level Likert scale, responses of the above 9 variables were reported as; Strongly Agree, Agree, Strongly Disagree, Disagree and No Opinion. Responses were translated into an observable value and their values were determined on a simple mean, shown in the following table.

Mean Values of Hypothesis 1

Question	IOC	ONGC
1. Safety and health of their employees is the priority of management.	3.042553	2.819149
2. The personal Protective Equipments like safety shoes, helmets, goggles, gloves, etc. which are helpful in safe working are always available.	2.93617	2.643564
3. The health and safety training programs are organised by the organization after accessing the needs of the employees.	2.882979	2.840426
4. There is the practice of safety audits and inspection at regular intervals.	3.042553	3
5. The experts do safety audits and inspections.	2.93617	2.744681
6. The Safety Committee of the organization plays an important role in the organization.	2.808511	2.606383
7. Administration seems interested in health and safety before an incident / accident happens.	3	2.734043

8. Follow-up measures after incidents and accidents have taken place.	2.914894	2.744681
9. Employees are satisfied with the inspection and follow-up measures uses by the management.	3.053191	2.882979
Total of Means	26.61702	25.0159
Arithmatic Mean of Means	2.957447	2.779545

The average of their values, which is 2.957447 for the Indian Oil Company and 2.779545 for the Oil and Natural Gas Corporation, is determined at the subsequent point.

Primefacia, it is revealed that the value of the IOC health and safety programme is more powerful than ONGC. The T test has been controlled and the critical value of t is 2.144787, while the measured value of t is 3.624503. The estimated value is more than the critical value, so the null hypothesis is dismissed and it is inferred that there is a substantial gap between the IOC and ONGC successful health and safety initiatives.

Finally, the Indian Oil Company has more successful health and safety policies than the Oil and Natural Gas Corporation.

CONCLUSIONS

The protocol followed by the researcher in obtaining the data for this analysis presented in the next chapter was carefully presented in this study. It also addressed the necessary protocols for the study carried out in very specific terms on the data obtained in such a way. Samples were gathered from employees and executives.

This thesis was an exploratory examination. The goal of this research is to examine the significance and current status of health and safety management in the companies sampled. Two public corporations, the Indian Oil Corporation and the Oil and Natural Gas Corporation, have been chosen for this study. At an early point, a total of 27 companies are being evaluated for research purposes. This cluster of companies is made up of both public and private

companies. Since both the sampled companies play a vital role in India's refinery industry, two sampled companies are purposely chosen. The research was performed to clarify the knowledge and strategies of health and safety management.

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