SAFETY CULTURE IN THE OIL AND GAS INDUSTRY

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Dedication

I dedicate this research to my family, especially to my Parents. Their time, energy, and assistance were essential to the completion of my study. I wish to thank all of my classmates who supported me in completing this paper. I learned about the enthusiasm, energy, and inspiration that one can acquire from achievement of someone else. I hope to perform this research with me long after current study has expanded our understanding of incidental education. Particular thanks to my educational professor, [Dr. Name], for his/her support and dedication throughout the study.
Declaration

I [type your full name here], declare that the following research and its entire data has been an individual, unaided attempt and have not been published or submitted earlier. Additionally, it shows my views and take on the issue and is does not describe the view of the University.

Signature:
Dated:
Abstract

Implementing Health and Safety culture within oil and gas organizations is an issue of prime importance not only from the point of view of care workers, facilities, environment and third parties in general, but are constituted as an activity and make generating value to the company in question; value that is associated with the development of productive activities under business models that include and consider the importance of workers as a resource and not as mere members of the organizational structure. Thus, it is necessary to achieve the implementation of health and safety culture within the oil and gas companies.

This study tends to focus on the issue of the importance of implementing health and safety culture within oil and gas companies, how it can be achieved and what are hindrances and barriers in this regard.

This research study uses a qualitative research methodology where data was collected through face to face semi structured interviews from the high management of oil and gas companies. The sample size for this study was eleven participants.
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Chapter 1: Introduction

1.1 Background

The safety culture of the organization is defined as the values, beliefs, assumptions and shared norms that may govern organizational decision-making as well as individual and group attitudes about risk, safety and the proper conduct of operations risk. Culture becomes the engine and provides the principles that guide the structure of organizational goals, the means to achieve the goals, criteria for measuring the progress and development of methods to correct deviations from standards and results expected. Thus, culture is transmitted to subsequent generations of the organization.

First, managers need to understand their culture and climate and ensure security in their organizations. Culture leads to individuals and groups regarding attitudes about risk, safety and the correct behaviour in risky operations. Second, managers need to know that there are a number of tools that can understand the culture in their organizations. Third, when managers implement the tools in their organizations, should ensure that they help to structure security processes of the organization.

The efforts to maintain health and safety and to control injuries at work are an important aspect of today’s workplace. The control over safety hazards at work can only allow better use of human and material resources to ensure that these physical conditions enhance their performance, but also relate to the industrially known fact that accidents represent high costs for companies. The issues of Industrial Health and Safety is important and can be approached from different perspectives, wherein each of them emphasizes different elements of science, but complementary in describing and explanation of Hygiene and Industrial Safety as a whole. In
this regard, the Administrative Science, Behavioural Sciences through the Psychology, Social
Psychology and Industrial Engineering and Communication Sciences, are the core prospects
from which the issues of industrial Health and Safety can be addressed.

In another vein, it should be noted that the conceptual objectification of elements related
to Industrial health and Safety, in organizational terms, is in the companies to develop programs
to clarify the guidelines in designated area. Consequently, the programs provide guidance for
application of measures to improve working conditions, controlling the risks involved in the
tasks of workers in each of their areas, in order to minimize the occurrence of property damage,
personal injury and accidents during execution of work.

The industrial programs of health and safety are usually direct and perform certain logical
steps, which generally run in the following order: ensuring the participation of senior
management, organizing for desired achievements, detailing the plan of operation, inspect and
monitor operations, engineering consider revisions, use protection devices as a last resort,
providing education, training, motivation and training for workers.

The aforementioned programs usually consist of three main areas, which end up defining
the Programme of Industrial health and Safety as Policies, Processes and Results. Consequently,
the concept of policies in terms of Industrial Health and Safety is based on an orientation relation
to the road to be followed in a particular company. In a particular sense, Policy - on Industrial
Safety and Health - are guides to the safety of a plant, with the exception that in this case are
made public by the superior office. Thus, Policy, specify the attempts of a corporation and
distribute the responsibilities and the authority to achieve such attempts. Policy may include
scope, notices and sanctions when such obligations and responsibilities are not met. By
persuasive character implicit in corporate policy and the importance of clarity in this position, many companies publish what is designated as Health and Safety Policy, as a cornerstone of oriented creating a structure and a Program of Industrial Safety.

1.2 Problem Statement

Significant accident potential is said to be involved by the recent incident of Shell North Sea Draugen and other incidents, such as, the disaster of BP at the Gulf of Mexico in the year 2010 which also resulted into death of eleven men. A monumental shift was experienced by the operating environment of the gas and oil industry of North America due to this incident. The largest oil pollution disaster in the history of the United States was created by this incident (Griggs, 2011). Other notable incidents across the United States and the Canada were followed by this event involving several explosions, spills, and pipeline ruptures. This incident raised a growing interest to ensure that an unwavering commitment to safety is demonstrated by both energy companies and regulators.

Such incidents made the need for consistency and vigilance in safety improvement efforts more essential. Therefore, it is necessary that in efforts to ensure safe environments the organisations must stay persistent and safety must remain at the heart of all activities carried out for and by the organisations (Hopkins, 2011). Many studies (Ciavarelli & Crowson, 2011; Cooper, 2010) believed that a significant predictor of safety performance is the need of adopting a safety culture. It is also a part of the realisation of the need for increased safety performance.

Environmental protection, security, facility integrity, operational safety, process safety, and the safety of the public and workers are involved in safety. To protect the environment and keep people safe, well-implemented and carefully designed management systems are of great significance. A set of interacting or interrelated procedures and processes used by organisations
to accomplish goals and implement policy is referred to as a management system. However, such goals are typically related to the reduction and management of operational risk in high hazard industries, like, the gas and oil sector (Paul & Maiti, 2007). To accomplish that particular goal, the required procedures, policies, accountabilities, resources, and organisational structures are involved within a management system.

According to previous research based on several major industrial accidents that took place between the periods of 1982 till 1995, it was found that developed programs or management systems were maintained by most of the affected organisations. However, to ensure effectiveness and adequacy they were not reviewed or implemented efficiently on a daily basis. An observable disconnect between the policies and vision of the organization and their review, monitoring, implementation and planning was found, when major accidents took place (Chilingar & Endres, 2005). It was concluded that in creating robust defences against serious incidents, personal attitudes and management systems towards safety must go hand-in-hand together.

In European Union (EU) the main national gas and oil industry is the offshore industry of the United Kingdom. It is the leading employer and the major source of gas and oil demand of the United Kingdom. It has many subsea installations, around one hundred and eighteen gas platforms and one hundred and seven oil platforms. Since the offshore gas and oil industry is located in a physically challenging and harsh environment, therefore, safety is necessary is this industry (Cox & Cheyne, 2000). Challenging conditions for safety and health issues are presented by this hostile marine environment.

Similar to any other high-hazard industry, there had been a lot of different disasters in the offshore gas and oil industry of the United Kingdom and this has made the safe operations an
essential factor. The Piper Alpha disaster of year 1988 is one of such disasters that marked the
turning point in the offshore safety and resulted in the death of one hundred and sixty-seven men
(McGinty, 2009). Safety is certainly a good business as the employees’ confidence and the
organisational value are negatively affected and loss of life is resulted by accidents. Therefore,
many of the previous studies regarding offshore environments have focused on the issue of
safety.

In more recent investigative reports, similar findings were found. In case of the Gulf of
Mexico and the Michigan oil pipeline rupture blowout, it was fond that the negative effects of
the incident got increased due to ineffectiveness of the safety management systems. A disturbing
pattern of organisational cultures was another key finding of major industrial accident reports
(Sovacool, 2008). To ensure that safety is placed ahead of commercial pressures by each
contractor and employee, there was a lack of required sources and commitment by the
organisational cultures. From analysis of global incidents, it is clearly evident that in most high
consequence accidents, one of the key factors is the safety culture. This has reflected upon the
necessary pervasive organisational culture which must be developed by the companies. In that
particular organisational culture, all personnel must demonstrate preeminent priority and safety
must be the core value.

Safety improving steps are considered as a part of regular routine and safety is promoted
as an organisational goal by the safety culture. The need for the adoption of safety culture in the
industry was highlighted by the incident of Piper Alpha disaster. Since then one of the prime
considerations within the industry has been the issue of safety culture and efforts are made by
every organisation to embrace such culture (Pitblado, 2011). However, other factors, such as, the
environment and integrity must be considered while placing emphasis on safety culture. The link
between safety performance and organisational efficiency and effectiveness and participation of workers has been demonstrated by most studies. However, the link between the overall safety of an industry/organisation and participation of workers has been examined by only fewer studies.

In safety-related decisions, there is a strong impact of personal involvement on the associated safety culture and safety performance within offshore environments. A cultural change in an organisation can be created by management through practices related to worker involvement. If changing the attitudes of workers is the aim of involvement practices then employees are likely to become quite committed to their organisation (Clarke, 2006). Through it, the confidence of employees and their commitment and loyalty towards their organisation are likely to enhance. However, it happens only when a positive feedback is achieved by the management in the workers’ attitude.

Since in improvement efforts employees are adequately involved, therefore, in order to accomplish better safety performance, it is necessary that commitment in high-involvement workplaces is present. Through organisational commitment as well as positive attitudes characterised by natural satisfaction of the work and trust, this commitment is gained. Nevertheless, the leaders and management can enforce building culture through behavioural and attitude change unless there is cooperation reflected by the individuals. Since it is quite impossible to change the attitude of everyone at the same time, therefore, only on an incremental basis such cultural change can only be achieved (Clarke & Ward, 2006). It is quite unusual to see that some workers pay lip service to safety improvement efforts, while some are totally committed. However, it is likely that more attitudes can be changed through peer influenced and continuous involvement efforts.
There are many differences in the form and content of corporate policies. However, the style is not as important as the clarity with which it must be distributed. Additionally, the processes are understood as the set of logical operations ordered and whose purpose is to obtain a certain result. Being such processes, in this particular case, the derivatives of the Health and Safety Policy implemented in such undertaking. Consequently, the processes associated with the objectification of Policies and Programs in the matter referred to in preceding lines. Finally, the results represent the concrete and actual achievement against the objective sought on industrial health and safety and reflected in policies, i.e. the results are the effect and consequence of an event or transaction; such operation that is associated with the objectification of the Policy and processes.

Thus, the three areas mentioned can be studied from the scientific perspectives. The present research adopts elements of Management perspectives of Behavioural Sciences through Social Psychology, Industrial Engineering and Sciences Communication for comparative analysis of policies and related Industrial Hygiene and Safety Processes context and to present particular reality. While the Results area will be treated operatively through the Science of Industrial Engineering.

1.3 Rationale of the Study

The health and safety culture within oil and gas organizations is an issue of such importance that extends beyond the limits of Industrial Engineering, which usually defined parameters of this subject area, thus underlining the importance within the health and Industrial Safety relevant elements: administrative, behavioural and communication in a particular organization. With which underlies the need for understanding health and Industrial Safety from the different planes of incidence.
This research study is significant because health and safety culture within the oil and gas organizations is of prime importance and should be handled intelligently. The result of this study may benefit oil and gas companies as it discusses how to ensure health and safety culture within oil and gas companies and how to involve the workers of the company in maintaining a health and safety culture within the organization.

1.4 Purpose of the Study

The basic aim of this study is to discuss the importance of health and safety culture within oil and gas organizations and see how these companies can ensure the participation of their employees in maintaining health and safety culture in the organization.

1.5 Research Questions

- What is the importance of maintaining health and safety culture within oil and gas companies?
- What are the measures taken by the companies to ensure a healthy and safe working environment within the company?
- What is the importance of workers participation in maintaining health and safety culture in the organization?
- How workers participation can be ensured to create a healthy and safe working environment?

1.6 Research Objectives

- To discuss the importance of health and safety culture in oil and gas organizations
- To explore the means adopted by companies for maintaining a healthy and safe working environment
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- To investigate the role of workers in managing and running a healthy and safe organization
- To explain the measures taken to ensure workers participation in creating a healthy and safe working environment
Chapter 2: Literature Review

HSE (2005) reports, safety cultures are the behavioural patterns and outcomes of group values and individuals with competencies and attitude that depict commitment to the health and safety management of an organization along with the proficiency style of an organization. Organizations that have positive safety culture are more prominent to run their operations smoothly as these organizations ensure existence of effective methods for prevention of hazards thus supporting environment of mutual confidence through sharing perceptions related to value of safety.

It is not any easy task to establish culture of safety within oil and gas industry as the leadership faces many challenges and risks in course of their operational activities. So, leadership must devise a sustainable and robust plan to mitigate all risks through getting deep understanding of innate risks associated with any operational activity. Agency of international atomic energy, in 1986 introduced the safety culture for the first time in their Chernobyl nuclear power plant. According to Fleming & Meakin (2004), reporting of disaster in case of accidents indicated the poor safety culture at the Chernobyl plant due to violation and errors in standards of operating processes.

According to Reason (1998), a robust safety culture is formed by varied cultures including, reporting culture, informed culture, flexible culture, just culture and learning culture. In an informed culture, organizations gather and assess data to stay updated of safety related performance. Whereas, organizations having culture of learning are found to learn from their inaccuracies and accordingly make alterations to mitigate unsafe conditions. In case of organizations having flexible culture, chain of command can be reconfigured if they have to tackle vigorous and demanding micro or task environment. While in organizations with just
culture, people are aware of unacceptable and acceptable behaviours. Behaviours considered unacceptable are tackled with fair and just manners. Organizations with reporting culture demonstrate that people have confidence of reporting about safety concern without any apprehensions of holding responsible for incidental risks.

Professor Reason (1998) summarizes the 7 important aspects that an organization is required to incorporate for nurturing an operational safety culture:

1. Organization needs engine that effectively take the culture towards an objective of highest;
2. Engine’s power is drawn from not disregarding to be frightened – satisfaction kills;
3. Organization requires monitoring of accurate data and thus, incorporates an informed culture;
4. Organization should develop a reporting culture effectively to incorporate errors;
5. Determine and sustain a just culture within the organization;
6. Manage the potential to reconfigure all through the danger or high tempo within the organization. Thus, it helps promoting flexible culture;
7. An organization should sustain a culture of learning

2.1 Significance of Safety Culture

Things that people say, feel, hear and see are influenced by culture. The behaviours and decisions of individuals within an organisation are influenced by culture and safety performance and outcomes are ultimately driven by these behaviours. Regulated organisations that are ultimately responsible for managing the risks related to their activities and operations is the main aim of safety culture frameworks. A strong safety culture is the one that is learnt by the
organisation from others and its own experiences with the objectives of enhancing safety, regardless of whether or not someone is watching people work safely, in response to a safety concern hesitations will not be made by everyone in the organisation (Parker et al, 2006).

Furthermore, it also involves such employees that feel encouraged to report regarding safety risks, for making safe decisions every employee must feel recognized and empowered, everyone is aware of identified risks and safety is demonstrated as the overriding priority and value by leaders. One of the keys to maintain and establish a healthy safety culture is leadership. Corporate culture is shaped by the decisions, actions and attitudes of senior and executive management (Choudhry et al, 2007). To communicate expectations and values formally, management systems’ procedures, processes, priorities and policies are used by leadership.

The initial framework of the corporate culture is established by the executive management through these mechanisms. Ensuring that risk is managed appropriately and considered while taking every decision becomes a normal business function in organisation which is strongly in tune with maintaining and establishing a positive safety culture (Silbey, 2009). In order to proactively manage safety in advance of an incident and to identify areas of weakness, performance measures that provide an overall picture of the current state of the organisation is set by leadership.

Tillerson (2010) states that a safety culture can be flourished if it is found embedded throughout the organization. In organization having more focus on safety culture, leaders determine safety as their prevailing priority and value. In such organizations, everyone can be found informed of known risks along with the presence of vigilance to new hazards. If a safety culture is prevalent in the organization, all employees are given empowerment and recognition to make secure assessment and safe decisions. Employees of organization feel confident while
reporting hazards related to safety including occasions where mistakes have been committed by them and posed a threat to them. In such organization, no one shows reluctance to take action in case of any safety concern without threat of reprisal and disciplinary action and people perform their job safely.

There are two kinds of accidents in high hazard industries, i.e., accidents that take place at an organisational level and accidents that take place at an individual level. Although the consequences of individual accidents can be significant to those affected, for instance, fatality or worker injury, but they are of limited consequence and more frequent. The outcomes of organisational accidents can be catastrophic and widespread. Fires, explosions, blowouts, spills or product releases are typically involved in these accidents taken place in the gas and oil industry (Leveson et al, 2009). Within the respective organisations, many individuals operating at different levels are involved and there are multiple contributing factors and causes of these
accidents. The greatest risk to the safety of individuals and their environment is posed by organisational accidents.

One of the major predictors of safety performance is safety culture at the heart of effective management of all risks offshore, like, major hazards and accidents. Moreover, major past disasters in the gas and oil industry have proved that in order to prevent critical incidents and hazards, fixing of procedures and rules is not enough (Cooke & Rohleder, 2006). Therefore, a program to improve the safety culture is maintained by almost every organisation in the North Sea of the United Kingdom. In recent decades, safety culture has been identified as one of the most important theoretical development in safety and health research. In safety culture and safety attitudes, training is clearly effective.

The Piper Alpha disaster was one of the most important investigations. Billions of dollars property damage was caused to the company and around one hundred and sixty-seven men lost their lives in this incident. The investigation indicated due to misguided priorities in management putting productivity ahead of safety and design practices, flaws in design guidelines, questionable decisions and accumulation of errors, the accident was resulted (Van Scyoc, 2008). According to many researches in the field of safety and health, unsafe behaviour was the major reason behind eighty-five to ninety-eight percent of all workplace injuries and human error was the main cause of the most accidents.

It was argued the cause of eighty-eight percent of industrial accidents was the unsafe act of people while two percent of accidents cannot be prevented or ten percent are a result of environmental or mechanical conditions. However, it has also been found that an individual active error is the major cause behind organisational failures. This suggests that the bases for most individual errors are organisational failures and they are strongly associated with the
prevailing culture of an organisation. In terms of employee’s perceptions, the safety culture within the operating organisation is described into six factors, such as, supportive environment, control and conflict, attitude to blame, appreciation of risk, personal need for safety and management commitment (Lawrie et al, 2006).

2.2 Safety Climate

The problem of determining the effectiveness of safety management systems or in general, security efforts, has been recognized by experts in theoretical and practical industrial safety, as one of the largest in the field this discipline (Bailey & Petersen, 1989; Bailey, 1997; Cooper, 1998; Dotson, 2002; Esposito, 2002; EPSC, 1996; Mearns & Flin, 1999; Mearns et al, 2001 Newell, 2002; Sarkus, 2001; Stricoff, 2000; Zohar, 1980). There have been numerous studies worldwide and from many points of view, but nevertheless the dilemma persists, there is a trend toward a solution in other areas of knowledge explored recently experienced a breakthrough in recent times, science management and behavioural in the field of psychology of security (Sarkus, 2001).

Safety Climate can be considered as a subset of the Working environment variable (Coyle et al, 1995). Therefore, the measurement of certain precursors of accidents operationalized in the variable climate of security is a powerful tool for the design of programs to correct, improve and promote the levels of health and safety in organizational contexts (Coyle et al, 1995; Zohar, 1980, 2000). Garavan & O'Brien (2001) have pointed out that a large number of quantitative and qualitative studies on safety in the workplace have identified the Climate Security as a key factor influencing organizational behaviour and performance in employee safety.
In a study conducted in Ireland by Garavan & O'Brien (2001) on industrial accidents and injuries, found that perceptions of safety climate they were significantly associated with the range of safety behaviour, so that if employees perceive a climate of strong security, for example, in the form of engagement with security, management commitment; were more likely to assume a personal interest in security activities, be more proactive and demonstrate a better ability to perform tasks safely, reducing unsafe behaviours such as violation of safety rules, adoption of security by exception and get involved in risky behaviour in the workplace. The results of this study indicate that unlike many of the typical individual-level interventions, safety specialists should begin to focus on broader security strategies and consider aspects such as communication about safety, perceptions of Safety Climate the existence of role models and the identification of more general data on accidents and unsafe behaviour trends.

Safety Climate traditionally been evaluated in organizations through the application of questionnaires to employees (Fuller & Vassie, 2001). Harvey et al (2001) and Mearns & Flin (1999) consider that often have used the terms "Safety Culture" and "Climate Security" as one, but agree that climate reflects the attitudes, perceptions and beliefs while culture is much more complex reflecting values and norms evident in the administrative practices of security. Moreover, there is evidence that the assessment of Safety Climate as closer to benchmark safety culture has significant correlation with indices of frequency and severity, Sarkus (2001) or with criteria that distinguish firms with high and low accident rates (Mearns & Flin, 1999; Mearns et al, 2001; Zohar, 2000).

Neal & Griffin (2008) have focused on the development of a model that includes Safety Climate on the league of safe behaviour. In their model a distinction is made between components, determinants and performance history. The performance components represent
behaviours that individuals develop at work, differentiating two types: for example compliance with safety use personal protective equipment, work procedures, etc. and participation in security, for example voluntarily participation in safety activities, help their peers, attend safety meetings, etc. The determinants of performance: knowledge, skill and motivation are direct factors responsible for individual differences in behaviour. If the individual does not have enough knowledge, skill or motivation to meet or engage in security, then not be able to perform these actions. The performance history is factors that affect behaviour through their effects on knowledge, skills and motivation. Safety Climate appears as one of the potential record.

Among the main contributions can be extracted from Neal and Griffin model is, firstly, the importance is of Safety Climate as an aspect in determining to be used as input for analysis and research with different approaches to Industrial security. Furthermore, the model plans, unlike traditional assumptions, it is not enough that interventions have a unique approach to meeting the safety aspects, it is also necessary to consider the participatory aspect of workers and what it is primary, is to identify the antecedents and determinants of behaviour, derived Climate Security main task of this work.

Based on the Minnesota Perception Survey designed by the University of Minnesota, Bailey & Petersen (1989) and Bailey (1998), the 2000 Battery PREVACC University of Valencia, and OSQ (Offshore Safety Questionnaire), University of Aberdeen, the Corporate Industrial Safety and Environmental Protection in 2002 developed measuring instrument "Survey to measure Safety Climate" ECLISE. The ECLISE has a total of 85 items grouped into 21 categories with a dichotomous structure: Involvement of employees, effective safety meetings, awareness programs, effective accident investigation, effective correction of hazards, effective supervisory training, effectiveness of procedures, discipline, attitudes towards safety, safe work
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environment, effective training of employees, effective communication, effective security goal setting, commitment to safety, credibility of management, effective inspections, performance monitoring, recognition for safe behaviour, attention problems related to stress, effective corporate governance and attention to new employees.

With the measurement of Safety Climate underlying flaws in security systems that influence human and organizational behaviour are identified and their methodology has been developed by a research encompassed the study of safety practices, development of models, correlation tests between work practices and reported performance data and compiling a database of factors associated with successful safety programs (Bailey & Petersen, 1989; Bailey, 1998; Sarkus, 2001)

2.3 Framework of Safety Culture

The industry of oil and gas must compete with a range of safety, health and environmental issues all through its array of operations. Regulatory supervision enforces oil and gas companies to establish and apply safety management systems effectively in order to protect environment, workers and general public. The frame work of safety culture for oil and gas industry as proposed by Reason (1998) is given below:

2.3.1 Cultural Threat #1: Production Pressure

Whenever there is a gap between safety and production then pressure on production arises. This may be because of the reason that leadership may put an emphasis over meeting the demands under already established budget and schedule instead of focusing to work safely. Strategies, plans and processes of business do not succeed in addressing the concerns of safety adequately. Leadership may fail to visualize the effect of their actions in safety erosion as a value
of organization. The consistent pressure between safety and production leads to gradual and slow disintegration of safety margins.

### 2.3.2 Cultural Threat #2: Complacency

Self-satisfaction in terms of complacency may arise when there is a prevalent belief in the organization that all potential risks have been controlled due to which organizational attention towards risks is reduced. There may appear a false impression of being safer than the other organizations that has no need to be compliant with best practices and standards of industry. Such organizations fail to learn from their past incidents as they have lack of attention towards data related to critical safety. Risk control can be minimized because supervisors do not take interest in checking whether the workers are following safety rules or not.

### 2.3.3 Cultural Threat #3: Normalization of Deviance

When deviation from processes and safety systems is generally accepted this is regarded as normalization of deviance occurs when it becomes generally acceptable to deviate from safety systems, procedures, and processes. Management systems are not applied in the various operations avoiding the safety defences and rules to get the job done at the scheduled time. Such organizations fail to provide effective system to resolve inadequacies in operations. The gap between the reporting time of safety concerns (inspection, hazards and audit finding).

### 2.3.4 Cultural Threat #4: Tolerance of Inadequate Systems and Resources

When acceptability to work with insufficient and inadequate resources and system appears then tolerance of insufficient resources and system arises. It is because of the reason that organizations try to do more with little resources. Changing conditions and operational planning for unpredicted issues are not resolved using any kind of allowance that creates
contingencies for the accomplishment of work. Such organizations are slower in reaction when changing conditions are faced. Organizations use reactive approach towards the management of safety as a wide gap exists between the reporting and resolution of safety issues.

2.3.5 Cultural Defence #1: Committed Safety Leadership

Genuine commitment of leadership demonstrates the safety as organizational value that can be expressed by making systems, adequate resources and rewards available. Leaders committed to the safety understand the safety and goals conflicts and takes measures accordingly in order to tackle issues in effective and transparent manner. Leaders directly participate in the safety management systems. They have proper knowledge of threats and hazards affecting the organization so they take proactive measures. Such management system identifies lines of direct reporting between the officer made accountable and safety personnel.

2.3.6 Cultural Defence #2: Vigilance

Preoccupation of organization with ability and willingness to get the appropriate and precise inference from accessible information about safety can be regarded as vigilance. The organization implements appropriate changes to address the lessons learned. In order to create awareness and to understand the risk related to safety, organizations impart in dissemination of relevant information. It includes the continual collection and analysis of relevant data in order to identify hazards (human, technical, organizational and environmental factors) and manage related risk.

Employees are willing to determine the concerns of safety without getting scared of punishment and blame. Vigilant organizations have proactive processes for surveillance and everyone contribute in reporting of incidents, near misses and errors. Indictors to gauge safety
performance are tracked, assessed and prospective assessment is carried out to recognize future risks.

2.3.7 Cultural Defence #3: Accountability and Empowerment

Expertise of frontline employees helps management to meet the challenges of safety. Upon noticing any hazard or threat, employees may close any activity to eliminate and report it when it is causing threat by increasing the production cost. Responsibilities and accountabilities related to safety are recognizable as these are documented at all levels of organization. Employees are empowered to do what appears to be right with respect to safety concerns. Management holds employees accountable and rewards them for their participation and commitment to the safety rules and standards.

2.3.8 Cultural Defence #4: Resiliency

The potential to respond in a way to meet changes of demand while managing emerging threats is known as resiliency. Organizations have mechanisms for managing complicated activities for meeting constantly fluctuating demands that exist in an industry with high hazard. Such organizations can respond to unpredicted varying conditions in an effective and timely manner.

2.4 Path Forward

Culture of safety in oil and gas industry can be progressed by developing the frame work and statement on safety culture. Many regulatory authorities use indicators to get intelligence of potential threats related to culture and to get the understanding of best practices. The management encourages the prospect to elucidate expectations related to regulatory affairs and
provides deep understanding on performance of industry which may support the development of novel and modern solutions that reinforce performance of safety across the industry of oil and gas.

### 2.5 Worker Participation and Involvement

Fernandez-Muniz *et al* (2007) indicate the involvement of employees to be an essential factor when developing safety management system effectively. This statement has further added by Cooper (2000), who suggests that validity and importance of safety culture must be perceived by workers in order to bring success through safety management system. Participation of every employee in improving and managing the performance in the context of safety is regarded as engagement of employee in safety management system. When employees are engaged, they feel as able as their supervisors are to make the conditions of safety better at a place they work.

**Positive engagement behaviour**

A practical guide for workforce engagement (2012) demonstrates the six core elements of employee engagement behaviours that include: communication, visibility, support, involvement, challenge and participation. The above diagram illustrates that when positive engagement
behaviours are improved they result in prevailing the engagement culture that is the outcome of positive behaviour depicted by employees in terms of safety concerns.

2.5.1 Communication

All tasks taking place at the worksite encourage and engage employees by listening, consulting and including them in the processes concerned to safety. Managers or peers should reinforce and set obvious prospects that employees require to be accountable and responsible for safety of themselves and others. Management can communicate employees to develop an environment of trust and mutual respect. To achieve this, views of employees on safety concerns can be listened regularly and feedback can be provided to them on priorities of safety. Management can recognize the visible safety behaviours and practices demonstrating at worksite.

2.5.2 Visibility

All the tasks performed at workplace are visualized to be factors for explicitly promoting engagement of employees in safety. Employees and representatives of safety are made certain by providing them obvious understanding of what they are expected to act and behave whenever any safety concern arises in their respective work area. Managers can spend some time on regular basis with the employees at the worksite to know their personal level of safety in relation to provided conditions.

2.5.3 Support

Support, time and resource help employees to be engaged in safety management by accomplishing their worksite roles. It is the responsibility of manager to provide knowledge and understanding to employees about limitations and strengths concerning safety management. Management also needs to take certain actions ensuring the essential ability to perform work with safety.
In order to ensure the work being safely done, face to face discussion or instructions should be given to employees on various safety related matters in oil and gas sector. It is also necessary to ensure them the transformations occurring in working practice may have a major influence on safety of them and their contemporaries. Rapid action should be taken over the issues and concerns regarding safety in oil and gas sector. Therefore support of leadership site is taken where it is needed.

2.5.4 Involvement

All tasks performed at workplace vigorously exchange and provide information related to safety. Management can support workers to participate actively in discussion of teams about safety. In the planning process to improve safety culture, suggestions or input can be taken from employees. Employees and representatives of safety can be involved in investigations and inspections for incidents related to safety. Employees can be encouraged to report openly about concerns and issues related to safety.

2.5.5 Challenge

All tasks accomplished at workplace ensure employees that their ideas and views about worksite and operational safety are listened by their managers worksite ensure their views and ideas about safety are heard. Employees may insist on providing feedback on raising concerns and issues about safety. They may challenge any risky, insecure procedures, instructions or practices. They may prevent other employees from working unsafely.

2.5.6 Participation

All tasks performed at workplace positively and actively provide input to the efforts of managing safety. Employee may predict potential forthcoming risks arising in work processes
and may report the safety concerns to the leadership as if have clear understanding about tasks and processes.

2.6 Commitment of Employees

Commitment of employee through employee involvement, incorporation of union through collective bargaining, and subordination of worker and participation of employee through management prerogative are four main policies that can manage employee relationship. In the area of people management, the interchangeable use of the term employee participation and employee involvement is one of the major observations (Marchington & Wilkinson, 2005). According to CIPD, a process of employee involvement is known as employee participation. On the other hand, to engage the optimum, understanding and support of all employees in the commitment of organisation to its goals, a range of processes is referred to as employee involvement.

Delegating authority to employees across all levels of a firm by putting them into action, creating advantageous initiatives, encouraging them to generate ideas and involving them in strategic initiatives is referred to as employee involvement (Riordan et al, 2005). With a continuum to employee control from no involvement, the employee participation is a collective/pluralist approach. Processes and mechanisms, like, European work councils, worker directors, joint consultative employee share schemes, work councils, and collective bargaining are involved in employee participation.

On the other hand, to gain commitment to organisational objectives is the main aim of employee involvement. It depends on the maintenance of management control and is unitary and individualistic. It includes downward and upwards communications flow and is a part of a “soft” approach of human resource management (Richardson & Vandenberg, 2005). Moreover, beside
employee participation and industrial democracy, employee involvement is perceived as a method of accomplishing increased influence of employee on organisational decision.

2.7 Worker Participation Mechanism/Techniques

Employee ownership, work teams, job enrichment, representative participation, gain sharing plans, quality circle and quality of work life programs have been identified as key employee involvement techniques employed within organisation. In terms of their effect, these techniques were classified into three categories. Representative participation and quality circles involve weak effect (Cox et al, 2006). Intermediate effect is found between employee ownership and job enrichment. Quality of work life, gain sharing and self-directed work teams involve strong effect.

Either for group of workers or individual workers, upward communication has been identified as one of the various approaches to worker participation. Downward communication to group of workers or individual workers and finally job restructuring, involving, worker empowerment, quality of working life initiatives and job enrichment (Robinson & Wilson, 2006). Downward communication is the flow/communication of information downward to front line staff from management through such methods, like, notice board, staff forums, newsletter and handbooks. Town hall meetings, toolbox talks, and handbooks are the methods of downward communication prevalent in the gas and oil industry. On the other hand, the information flow to top management from front line staffs through informal or formal channels is referred to as upward communication. Appraisal schemes, employee survey, and suggestion schemes are often involved into these channels.

2.8 Safety Culture and Worker Participation

An indicator of willingness to make improvements related to safety is the employee participation as frequently used in the offshore gas and oil industry. To improve the safety
performance of the industry, there has been on-going debate regarding improvements in workforce participation since the major disasters happened in the offshore gas and oil industry (Christian et al, 2009). Since positive perceptions regarding the safety program are maintained by workers that are involved with safety and operations, therefore, it is inherent that worker participation and safety are related. In terms of workers’ perception regarding safety and health, one of the important factors is the organisational culture.

Similarly, the level of engagement is influenced by the culture but in order to build such culture that encourages participation, the workers’ participation is also essential. The benefits of employees participation regarding operational efficiency, motivation and communication has been identified by the gas and oil industry. A positive link has been found by previous studies between safety performance, worker participation and worker engagement (Fernández-Muñiz et al, 2007). Both the organisation and the workers can benefit from an improved corporate safety culture. After the Piper Alpha disaster the interest in worker participation increased considerably.

The participation of workers is an important method of maintaining and developing an attitude to safety which is advantageous in avoiding such incidents that may possess harmful outcomes. Safety is the problem for everyone, involving, both worker and management. Participation from individuals throughout the organisation is required by true safety excellence, although management commitment to safety is necessary (Nahrgang et al, 2011). On the safety culture of an organisation the key influence identified is management. Active worker engagement and participation in safety is required by optimization of safety culture. However, the highest possible level of power must be pushed downwards to the workers in order to maximise participation and obtain a maximum level of participation from workers. The individual member of the workforce has to be carried along even if everything to facilitate
change by writing new policies and altering routines is getting done by leadership and management.

2.9 Barriers to Worker Participation in Safety

The barriers to worker participation in safety are time and cost incurred to implement and initiate good practice and inadequate knowledge and understanding of the meaning of safety and health. The type and size of organisation, the value attached to participation in safety and health, the culture of organisations, attitudes toward safety and health, and the issue of complexity of safety and health regulations and legislation are other themes (Howells et al, 2008). As a result of the perspective that it is unlikely that workers would participate in safety and health unless management was committed to implementation of good safety and health practices the participation was also impacted by the management involvement in safety and health.

Under the lack of understanding and awareness, it was found there was no need of being burdened with the bulk of information accessible on safety and health as safety was concluded as a matter of common sense by many employees. One of the barriers that were also recognized was laziness as it results in workers’ perception of no need of participation unless it is essentially required and safety is the responsibility of leaders and managers only. To the practicality and design of worker participation in safety, one of the major barriers was the cost and time of implementing good engagement and safety practice (Tucker et al, 2008). It is due to the insufficient sources and strict time schedule that make it difficult for implementing correct procedures and practices or to take time off for training.

The complexity of regulations and legislation was another barrier recognized; it is due to the constant revision or changes in safety and legislations. Another identified barrier is the attitude of workers and employers to safety and health. Frustration with the impact of statutory requirements on the job, lack of commitment and interest, size of the organisation, the
importance of risk management and nature of operation, organisational beliefs, and fear of legal action were the six main perspectives that describe the attitude of employers.

Practical guide for workforce engagement (2012) demonstrates some of the obstacles that are given below:

2.9.1 Adequacy of processes

People always want to avoid inadequate and ineffective processes. Employee engagement in safety is affected by a variety of processes concerning assessment of risks, production planning, maintenance, shut-down processes and training and development. Instances of incompetent and ineffective processes have been mentioned below:

- If representatives of safety are not consulted during assessment and implementation of processes, it may hamper in participation of employees in safety management
- If coordination and cooperation is lacked while scheduling and shutting down the processes, it may create obstacle for employee participation
- If assessment processes are failed in terms of ensuring clarity for on-going process it also reduce employee participation in safety issues
- If information sharing and communication processes are ineffective or poor, this may cause employees to be reluctant to participate in safety management

2.9.2 Condition of plant and Equipment

Participation of people may also be affected by the conditions of equipment and plants as it determine the level of engagement that employees feel at work. Fit for purpose and well maintained and efficient equipment create convenience for employees to safely engage in various processes. Poorly maintained equipment’s and plants create risky and unsafe working condition.
There are some guidelines that may increase the participation of employees in the safety management system as described by ISHN (2000):

2.9.2.1 Offer employees the main aspects of support, knowledge and control

Workers utilize understanding of their environment to know the things that place people in risky or hazardous conditions. Appropriate alterations can be made possible to system if employees are given the control or empowerment. In conclusion, feedback from the management on safety suggestions and ideas of employees enable them to feel the true difference that they bring in the organization and their colleagues lives.

2.9.2.2 Provide the required levels of training, education, authority and resources

Ownership of the processes related to safety comes when employees are offered required training and education level along with the resources and control.

2.9.2.3 Getting the participation of employees in decisions making processes about safety

Employees should be involved in a way that they should be asked to provide their input in decision making regarding the safety concerns as it affects the personal safety of employees at worksite. Safety Action Team can be created for this purpose. Safety representatives can be selected by taking suggestions from employees and these representatives should be directed according to the safety standards set by professional and top management of the company.

2.9.2.4 Treating employees with honesty, respect and equality

Treating workers with respect, fairness and honestly can help them to be involved in the safety implementation. Managers can work to address their needs and concern thus enhancing their ownership ship and participation.
2.9.2.5 Expound staff and hourly employees about functioning of safety process

Employees should be demonstrated that safety process is operating in compliance with already established safety standards. They should be made understand that in case of noncompliance to safety standards in procedures no tolerance would be applied. There should be informal and formal recognition in response to employee’s efforts toward safety compliance.

2.10 Summary

Good engagement of all employees is strongly needed if company related to oil and gas sector wants to deliver outstanding performance of safety. However, company needs to improve, enhance and sustain the participation of employees over time.

Use of various toolkit for increasing participation along with frequent use of survey can foster the constant improvement in worksite safety. The engagement toolkit, including repeated use of the survey, will foster continuous improvement. Many benchmarks for workforce participation in oil and gas industry can be established to identify and learn from companies that have set exemplary participation relating to safety performance.
Chapter 3: Methodology

3.1 Introduction
This chapter discusses all the steps taken to conduct the research for this research study like the strategy of research, the method of data collection (Bryman, 2008), Sample size and technique etc.

3.2 Research Strategy
According to Scruggs (2011), research methods are of two types i.e. qualitative and quantitative. Nature of qualitative research is deductive that provides rich information for generation of hypotheses. It stresses to determine quality and essence of the study being conducted. Quantitative research utilizes reasoning. Its aim is to provide inferential relationship of variables with each other by quantifying the study. Which design of research (Qualitative or Quantitative) should be applied is often difficult decision to take. Researcher is required to take decision considering suitable design of research rather than selection of such design that appears more familiar and suitable for researcher (Saunders, et al., 2007).

Qualitative research is conducted to get understanding and interpretation of social interactions and to determine trends that are prevalent in opinions and thoughts. Whereas, quantitative research is conducted to examine the cause and effect that helps in making predictions by testing hypotheses. It also aims to perform quantification of data to produce results in a generalized way from selected population sample.

While using qualitative research methodology, interviews, field notes, observation of participants and open ended responses are noted for the collection of qualitative data. These methods are called semi structured or non-structured techniques. Whereas, structured and
validated data collection instruments like questionnaire and telephonic interview etc are used with precise measurement in the collection of quantitative data.

The following table presents a comparison of these two approaches

<table>
<thead>
<tr>
<th>S.No</th>
<th><strong>Qualitative Methods</strong></th>
<th><strong>Quantitative Methods</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Methods of qualitative research are comprised of in-depth interviews, group discussions and document reviews.</td>
<td>Methods include surveys through questionnaire, automated counting and structured interviews.</td>
</tr>
<tr>
<td>2</td>
<td>Hypothesis formulation occurs by inductive processes.</td>
<td>Testing of hypothesis, constructs and concepts that are predefined is conducted by deductive process</td>
</tr>
<tr>
<td>3</td>
<td>It is more subjective approach that helps in determining a condition or problem keeping in view those who are experiencing it.</td>
<td>This approach is found to be more objective that determines effects observed and interpreted by investigator.</td>
</tr>
<tr>
<td>4</td>
<td>It is a text based approach</td>
<td>It is a number based approach</td>
</tr>
<tr>
<td>5</td>
<td>It provides detailed account of information on small number of cases.</td>
<td>Information about large number of cases is provided by this method.</td>
</tr>
<tr>
<td>6</td>
<td>There are options of semi structured or unstructured responses.</td>
<td>There are options of Fixed responses only.</td>
</tr>
<tr>
<td>7</td>
<td>This method does not require any test of statistics</td>
<td>This method requires statistical tests for analysing the data</td>
</tr>
<tr>
<td></td>
<td>This method depending on skill and capability of researcher can provide valid and reliable results.</td>
<td>This method can provide valid and reliable results depending on the measurement scale and instrument employed in the analysis.</td>
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<tr>
<td>8</td>
<td>This method provides conclusions and implications that are less generalizable</td>
<td>This method provides conclusions and implications that are more generalizable</td>
</tr>
<tr>
<td>9</td>
<td>This methodology observes measures, behaviour and qualities</td>
<td>In this methodology, trends, quantities and scales are observed and measured</td>
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### 3.3 Research Approach

This research study is planning to use qualitative research methodology for this study. This method of research aids in description of existing situation for the group that is being studied only rather than providing generalize view of the population about situation. The situation that is observed in qualitative research is current only. It determines the theory that provides explanation about observed behaviour that makes qualitative method more inductive. In this research methodology, case studies, observation and personal interviews can be conducted. Verbal synthesis production and data coding are used for analysis.

Qualitative Research is a type of formative research that offers specialized technical depth for answers about what people think and what their feelings are. This allows understanding the attitudes, beliefs, motives and behaviours of the target audience. By its very nature, qualitative research is the emotional and contextual aspects of human response rather than objectively measured behaviours and attitudes.

Furthermore, the nature of qualitative research lies not only in qualitative techniques for answers but also the qualitative nature of the analysis required to implement it. Qualitative
research is interpretative rather than descriptive nature. It is performed with small groups of people who are generally not selected on the basis of probability.

There are both conceptual and practical reasons for using qualitative research. The main reason to use concept is that it provides a greater depth of response and therefore the consequent greater understanding can be obtained. In addition, qualitative techniques, especially direct interviews allow the researcher to combine types of behaviours relevant to a particular decision or action. The qualitative methodology identifies the links that connect the different choices and behaviours at the individual level, obtaining a clearer picture of the adoption process. Qualitative studies help to better understand the factors and background consecutive co-factors that influence behaviour and modifying it. With their results can generate concepts and strategies for the design of programs that seek to change behaviour.

Another conceptual reason for using qualitative techniques is related to the nature of qualitative research itself and how it relates to the processes of decision research. One can argue that the process of qualitative research and the broader learning process have important subjective or intuitive elements. The beginning of the formative research process, i.e., problem definition and training needs, as well as the formation of hypotheses and definition of variables-they are sludge processes. In addition to that there are many pragmatic reasons for using qualitative research methods:

- Costs: In general, qualitative research is more economical than quantitative research;
- Quick Execution: Some qualitative techniques, especially the focus groups can be run and analysed quickly without "automatic" data analysis;
- Flexibility: The study design can be changed while the investigation is in progress;
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- Direct link to the target audience: Qualitative techniques give program managers the opportunity to come into direct contact with the audience;
- Does not even require equipment: Qualitative research can be performed many times in places where there is no installation of computers or other equipment

3.4 Data Collection
In this research study the researcher has chosen both secondary and primary sources of data collection. For secondary sources, the researcher uses books, magazines, journals, articles, online databases, websites etc. to collect relevant data.

For primary data collection, in order to ensure the collection of the information necessary for the successful completion of this research project, the researcher has chosen the instrument of semi-structured interviews.

3.4.1 Interviews
The interview is defined as a conversation between a person (interviewer) and another (interviewee) to be done in order to get answers on the subject. The interview can be structured, semi-structured, no structured or open. This research study used a semi-structured interview, which based on a guide to issues or questions and the interviewer is free to enter additional questions to clarify concepts or to obtain more information on desired topics.

3.5 Sampling
The sample consists of eleven persons belong to the higher management of oil and gas companies. The researcher has contacted twenty persons belong to the higher management of oil and gas companies but most of them have very busy schedule and thus, the researcher had the chance to get face to face interview of eleven persons.
All the participants are within the age bracket of 48 to 60 years and are responsible for making health and safety related policies of their respective companies.

3.6 Data Analysis

The data collected in the field are the pieces of a puzzle that the analyst is responsible for fitting, using the evidence gathered to guide the search for new evidence. The data contains informative content, supporting information about the internal or external reality to the subjects that will be used for research purposes. Qualitative data researchers consider a range of information on the interactions of individuals with each other and with the researcher, their activities and the contexts in which they occur, the information provided by the subjects either on own initiative or at the request of the investigator, or artefacts that build and use.

The interconnection of the processes of collecting and analysing research has materialized methodologically, within the qualitative tradition, called sequential selection strategies, which determines the progressive theoretical construct data collection.

According to the ideas presented above, the methods of qualitative data analysis are unique. Although there is no single, standardized way to perform analysis, yes it is possible to distinguish in most cases a series of tasks or operations that constitute the common to most studies basic analytical process. Procedural approaches focus primarily on presenting this type of tasks and operations, and provide advice, recommendations and warnings for handling, layout or presentation of the data, and the final drawing conclusions.

A first type of tasks to be faced for the treatment of such information is the data reduction, that is, on simplification, the summary, the selection of information to make it understandable and manageable. Among the tasks of qualitative data reduction, possibly the most
representative and at the same time the most common are the categorization and coding. Generally, the qualitative data analysis involves segmenting unique elements, especially when the data is textual type. In the overall data set can be differentiated segments or units that are relevant and meaningful. Categorization, which is certainly an important tool in the analysis of qualitative data, makes possible conceptually units are covered by the same topic. Codes representing categories, consisting for both brands that we add to the units of the data, to indicate the category to which they belong.

During encoding certain codes could have been grouped into one. For this reason, the encoding is usually performed as a recurring process. Furthermore, as the researcher further examines the encoding rules may be altered unconsciously. The identification and classification of elements are tightly coupled to synthesis. When we categorize placing different data units under one topic or theoretical concept the categorization is in itself a conceptual synthesis operation, since it allows reducing a number of units to a single concept that represents. In the data analysis, this conceptual synthesis is coupled to a physical grouping of units that are part of the same category.

3.7 Ethical Considerations

Data studied and recorded in qualitative method is present is the form of description that are narrative. Ethical concerns arising in this method are consent, and protecting the rights and safety of community and participants along with maintaining privacy of the participants (Peffers, et. al. 2007). There should be negligibility of harm to the participant by research study.

For ensuring participant’s confidentiality, investigator may not report the data considered private for showing identity of participants (Baez, 2002). Feedback should be provided by the researcher in order to recognize participation of individuals in order to pay gratitude.
3.8 Limitations

The limitations (Anderson, 2010) of using this method include difficulty of assessing, maintain and demonstrating the accuracy or correctness of the study. And findings are subjected to have researchers’ influence of biases and opinion.

There may be increased problems of confidentiality in the representation of results. Scientific community does not accept and understand it well as compare to quantitative research.
Chapter 4: Results

Cultural safety refers to the set of characteristics and attitudes of both organizations and individuals, which establishes as a top priority commitment to observing the general and particular safety. Thus, the safety culture is composed of two main elements that are at the organizational level, the development of policies, regulations and safety guidelines. As applicable and effective upgrade. Second, surveillance, monitoring and its lies appropriate, punishment of the enforcement of such policies by employees.

When the participants were asked about the safety culture of their respective companies, majority of them said that the organization tries it utmost to implement the safest, secure and healthy working environment within the organization. However, they have accepted that these policies are always followed, as it should be due to laziness and lack of involvement of the employment and due to lack of monitoring and surveillance from the management side. According to majority of the participants, safety culture is complemented by a factor of behaviours, attitudes and perceptions of employees regarding safety.

Participants unanimously agreed that employee’s participation is of prime importance for making the organization safe and secure. However, they agreed that their respective organization usually do not empower the employees so they do not get involved in the implementation of safety and health policy of the company.

The participants said that they offer face the challenge of lack of commitment from employee’s part which makes it difficult to implement the safety culture properly. They said that although the organization is providing organizational commitment through activities that it performs as a whole for attaining a better safety culture. Nevertheless, the level of commitment
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at the individual level, which is set by the activities that workers make to maintain safety in the workplace, does not reciprocate management’s efforts.

While discussing different aspects of health and safety issues of organization, majority of the participants are of the opinion that communication plays an important role in the implementation of health and safety culture. This knowledge allows further development of intervention strategies that are primarily intended to achieve safer behaviour in all the activities that make up the company. In such sense, both positive and negative metaphors are useful for understanding the workers to do on their industrial health and safety. According to the Participants, it is important for implementing safety culture and involving employees to communicate all the health and safety issues openly within the organization. This open communication helps the organization to gain the trust of the employees which ultimately leads to their loyalty and their determination in implementing safety culture within the organization.

When participants were asked that do they find difficulty in involving their employees in the implementation of safety culture within the organization, majority of them replied in affirmative. They said that sometimes the employees are not aware of the importance of health and safety environment within the organization; nevertheless, they accepted that after the incident of BP oil spill, most of the employees are well aware and cautious about safety and health issues. The participants also accepted that sometimes, organizations do not give much importance to the safety culture within the organization. However, this has also changed after the BP oil incident.

All the participants say that their respective organizations are making every effort to create awareness among the employees regarding health and safety issues. They said that
sometimes very minute negligence or mistake of a person may create a hazard for the company and for the people working in it. All the participants, unanimously, emphasised on the surveillance and constant vigilance of the environment because sometimes overconfidence also leads to accidents, for that reason, it is essential that both activities known to the workers as they are not to be undertaken preventive actions generated by themselves.
Chapter 5: Discussion

To establish the importance of worker participation in influencing a positive safety culture in the gas and oil industry is the main aim of this research. The relevance of the findings of the research to the overall objective and aim of the study will be interpreted in this section. It will be achieved by reviewing the various evidences obtained from the secondary research.

5.1 Worker Participation in Practice

It was relevant to explore the different viewpoints regarding worker participation in safety and health management in establishing the importance of worker participation in influencing a safety culture in the gas and oil industry. From the above literature review, it can be analysed that worker participation is referred to important methods of maintaining and developing an attitude to safety which is advantageous in preventing accidents that may have harmful outcomes. To provide input regarding recommendations on health and safety training, procedures and products an opportunity must be provided to the workers in the company, since it is related to daily work operations (Cox et al, 2006). For instance, the responsibility to conduct research or test out products to substantiate recommendations can be assigned to workers. Through actions initiated by the health and safety committee, the reporting of hazards, and the suggestion system, input of workers is effectively provided.

5.2 Information

Without information from and to workers the chances of success are slim to none since a culture change can only be initiated through help of workers. Information regarding warning to safety procedures as well as the level of communication of long-term safety goals determines the level of information. In fostering mutual trust, a role can be played by the quality and quantity of information received (O'Toole, 2002). In order for workers to be able to make any real input, problems have to communicated clearly. For maintaining communication between management
and workers, there has to be two-way communication as management preaching safety down to
the workers or mere consultation is not enough.

One of the barriers identified to worker participation in safety are the lack of up dated
information, poor information access, information overload, poor communications infrastructure,
and poor information quality. In order to provide a base from which to contribute to
improvements in organisational safety performance and provide suggestion, information is
required for the success of worker participation, therefore, the need for improvement in
information sharing cannot be overstressed (Fernández-Muñiz et al, 2007).

5.3 Communication

One of the major features identified of an organisation with a positive safety culture is
communication. Two main approaches to worker participation are upward and downward
communication. From management to frontline workers, there are a lot of different means of
downward communication. For example, video presentations, leaflets, teleconferencing, posters,
daily town hall meetings, toolbox talks, monthly safety meetings presented by OIMs and formal
trainings (Vredenburgh, 2002). The safety culture can be influenced through a two-way
communication method involving these two forms of communication.

From management to worker, the downward communication can be perceived as a form
of participation and is relevant. However, the willingness to gain worker input as against mere
consultation or mere preaching is displayed by communication methods from workers to
management. It can be concluded that in the effort to involve workers in safety management, a
huge role is played by communication (Choudhry et al, 2007). Communication plays a central
role both in safety improvements and worker participation.
5.4 Success Factors for Worker Participation in Safety

The success of worker participation process can be determined by a number of factors. Amongst these are openness through training and honest communication and leadership championship (participation) (Clarke & Ward, 2006). Since relevant factors can be further enhanced in order to accomplish best practice, therefore, it is necessary to further highlight those factors to worker participation initiatives. The prevalent agreement based on workers considering their responsibilities towards safety is not sufficient. Through proper empowerment and participation it has to be taken to a greater level in such a manner that in order make effective safety decisions workers do have the required security and power.

Another success factor is that continuous monitoring of organisational performance must be conducted and timely response to safety issues must be provided. To generate trust between workers and management, open communications are essential as a substantive and symbolic message that they are to be trusted in and positive and open manner is conveyed by it and it also ensures employees are informed regarding organisational issues (Aksorn & Hadikusumo, 2008). Training, workers ownership and participation, visibility and understanding of participative initiatives, management’s encouragement and participation, open and clear communication and recognition and reward are other success factors that have been identified and discussed within the previous research.

5.5 Participation and Encouragement from Management

In promoting safety as a core value in the organisation, the commitment of workers and management to safety is relevant. An indicator of management commitment is management’s encouragement and participation and throughout the findings it has been a prevalent theme. One of the very crucial factors to safety culture is management’s commitment. In terms of perceptions of workers the safety culture of an organisation can be described through
management’s commitment (Lawrie et al, 2006). Visibility, encouragement, participation, attitude to suggestions and commitment of management are some factors of great significance.

One of the majorly cited barriers to worker participation in safety was management. A major concern regarding worker participation as a management initiative was raised. Therefore, it can be argued that safety programs cannot be truly effective within the organisation without management’s commitment to worker participation. Management’s encouragement and participation was further identified as a major factor related to the means through which further worker participation in safety can be achieved and for the success of worker participation (Hopkins, 2011). There is an impact by management’s involvement in safety and health on worker participation.

It can be concluded that workers will be less likely to become involved in safety and health unless management was committed to introduce good safety and health practices. Participation of individuals throughout organisation is the requirement of true safety excellence; therefore, management’s commitment to safety is essential.

5.6 Further Ways of Engaging Workers in Safety
An important way of encouraging participation of workers in safety and health is that workers showing more interest and taking more responsibility in participation. Workers must make themselves available as elected safety representatives and need to volunteer more. In safety related activities, such as, meetings and toolbox talks, workers need to participate more and need to be personally involved. Management’s encouragement and participation is another majorly cited method. Mutual trust and openness can be fostered through leadership (Richardson & Vandenberg, 2005). Participation of employee can be better improved through ease of reporting and better communication.
One of the major barriers identified to worker participation in safety is fear of negative feedback which hinders reporting. As much as safety culture is influenced by worker participation similarly one of the ways to influence worker participation is safety culture. There has to be a safety culture for effective worker participation since workers’ feelings regarding speaking up regarding safety and health is influenced by it (Olive et al, 2006). In order to develop mutual trust between management and workers, there has to be honesty and openness and the need to be proactive. Honesty and openness is displayed by communication. In the sense that the experiences and knowledge of employees must be exploited, knowledge sharing was also considered as relevant.
Conclusion

An insight into the perspective of worker participation in safety in the gas and oil industry is provided by the findings of the research. It was agreed that there was no downside to worker participation in safety and the benefit of involving workers in safety and health management was a general consensus. It was further revealed by the findings that there is room for improvements, while with the issue of worker participation the industry is not completely in the dark. In effort to engage worker participation in safety management, there is more to be done. There can be no safe environment unless the industry makes people work on the job participation.

According to the findings it has been proved that in order to increase worker participation in safety, there are still major barriers to be overcome. The research has highlighted a number of barriers to the participation of workers in safety and health management, however, there a number of them, such as, low level of trust, inadequate training, and weak safety culture, fear of negative comeback, and management’s actions and participation. Some other less prevalent are lack of recognition, complacency based on the perception experience and age and lack of updated information.

The ways in which workers can be further involved in safety are highlighted by the findings. These ways are honesty and openness; ease of reporting, positive safety culture, communication, management’s encouragement and participation, in safety meetings the participation of workers, and workers taking more ownership and responsibility. Reasonable conclusions and a thorough exploration of the research subject have been made within this research and it has been shown by the findings from the secondary research undertaken. It is the belief of the researcher that impacts of safety culture on the effectiveness and existence of worker participation practice within an organisation and the influences of worker participation on
safety culture have been revealed by this research. Therefore, the overall aim of the research has been achieved to a great extent.
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