

**A STUDY ON OHSAS 18001:2007 IMPLEMENTATION
IN TL OFFSHORE SDN BHD**

HAIRUDDIN BIN NASRI

KQD 160040

**FACULTY OF ENGINEERING
UNIVERSITY OF MALAYA
KUALA LUMPUR**

2018

**A STUDY ON OHSAS 18001:2007 IMPLEMENTATION
IN TL OFFSHORE SDN BHD**

HAIRUDDIN BIN NASRI

**RESEARCH PROJECT SUBMITTED IN PARTIAL
FULFILMENT OF THE REQUIREMENTS FOR THE
DEGREE OF MASTER ENGINEERING (SAFETY,
HEALTH AND ENVIRONMENT)**

**FACULTY OF ENGINEERING
UNIVERSITY OF MALAYA
KUALA LUMPUR**

2018

UNIVERSITY OF MALAYA
ORIGINAL LITERARY WORK DECLARATION

Name of Candidate: Hairuddin Nasri

Matric No: KQD160040

Name of Degree: Master Engineering (Safety, Health and Environment)

Title of Project Paper/Research Report/Dissertation/Thesis ("this Work"):

A Study on OHSAS 18001: 2007 Implementation in TL Offshore Sdn Bhd

Field of Study:

I do solemnly and sincerely declare that:

- (1) I am the sole author/writer of this Work;
- (2) This Work is original;
- (3) Any use of any work in which copyright exists was done by way of fair dealing and for permitted purposes and any excerpt or extract from, or reference to or reproduction of any copyright work has been disclosed expressly and sufficiently and the title of the Work and its authorship have been acknowledged in this Work;
- (4) I do not have any actual knowledge nor do I ought reasonably to know that the making of this work constitutes an infringement of any copyright work;
- (5) I hereby assign all and every rights in the copyright to this Work to the University of Malaya ("UM"), who henceforth shall be owner of the copyright in this Work and that any reproduction or use in any form or by any means whatsoever is prohibited without the written consent of UM having been first had and obtained;
- (6) I am fully aware that if in the course of making this Work I have infringed any copyright whether intentionally or otherwise, I may be subject to legal action or any other action as may be determined by UM.

Candidate's Signature

Date:

Subscribed and solemnly declared before,

Witness's Signature

Date:

Name:

Designation:

ABSTRACT

In an era of globalization and rapid development, the requirements of occupational health and safety management system in organizations is vital importance either to a small or large organization after occurrence multiple episodes of disasters and fatal accidents. The existence of this awareness has led many organizations to take a first step by governing their safety management system. The aim of this study is to identify the problems and benefits implementing OHSAS 18001 series in TL Offshore Sdn Bhd located in Seri Kembangan. Data was collected for this study through walk-through observation, audit findings using safety management system assessment checklist that was refer from the OHSAS 18000 standard. Interviews and discussions were carried out with the onshore and offshore management to prioritize recommendations made in improving occupational health and safety management on each site. From the walk-through observation and audit safety management system assessment, most of the findings that have impact to implementation are being well-managed through various discussion and recommendation from other subsidiaries and also by client expectations by health and safety management system requirements. This study has fulfilled its aim and objectives. Future work recommendations could focus on to enhance new standardization such as ISO 45001 for TL Offshore and other subsidiaries in SapuraKencana Petroleum Berhad Group of Company.

Keywords: Occupational Health Safety Management System, Occupational Health Safety Assessment Series (OHSAS), TL Offshore Sdn Bhd

ABSTRAK

Dalam era globalisasi dan pesat membangun ini, kehendak terhadap sistem pengurusan keselamatan dan kesihatan pekerjaan di sesebuah organisasi telah menjadi perkara yang sangat penting kepada organisasi kecil mahupun besar setelah pelbagai episod kemalangan maut dan bencana yang telah berlaku boleh dijadikan pengajaran dalam setiap industri. Kewujudan kesedaran ini telah menyebabkan banyak organisasi mengambil langkah awal dengan mengurus tadbir sistem pengurusan keselamatan dengan mengaplikasikan sistem pengurusan. Fokus kajian ini adalah untuk mengenalpasti masalah dan faedah pelaksanaan sistem OHSAS 18001 Di TL Offshore Sdn Bhd terletak di Seri Kembangan. Pendekatan pengurusan keselamatan digunakan bagi tujuan kajian. Data dikumpul dan diperolehi melalui lawatan kawasan, audit menggunakan pengenalpastian sistem pengurusan yang standard. Sesi temubual dijalankan dengan pihak pengurusan di darat dan di laut bagi memantapkan lagi sistem pengurusan keselamatan yang sedia ada. Pemerhatian melalui lawatan dan audit, kebanyakan perkara berkenaan pelaksanaan pengurusan keselamatan dapat dikenalpasti dan diambil maklum melalui perbincangan dari pihak dalaman dan juga pihak luar melalui aturan sistem pengurusan keselamatan. Kajian ni didapati dapat memenuhi kehendak objektif dan cadangan langkah masa hadapan lebih mengkhususkan kepada pelaksanaan sistem baru yang lebih efektif iaitu ISO 45001 didalam syarikat TL Offshore dan lain lain syarikat didalam syarikat induk SapurKencana Petroleum Berhad.

Kata kunci: Sistem pengurusan keselamatan dan kesihatan pekerjaan, OHSAS 18001, TL Offshore Sdn Bhd

ACKNOWLEDGEMENTS

سَمِ اللهُ الرَّحْمَنِ الرَّحِيمِ

أَلْحَمْدُ لِلَّهِ رَبِّ الْعَالَمِينَ ، وَالصَّلَاةُ وَالسَّلَامُ عَلَى سَيِّدِنَا مُحَمَّدٍ وَعَلَى آلِهِ وَأَصْحَابِهِ أَجْمَعِينَ

Upon completion this project, I would like to express my gratitude to many parties. Foremost, I am truly grateful to Allah S.W.T for giving me this opportunity to prepare and completed this report. I also would like to acknowledge my sincere thanks to my family members for all the cooperation, support, inspiration and continuous encouragement given to me to complete this thesis. My father, Mr. Nasri Md Salleh, my mother Mrs. Asnah Che lah, My wife Noorazizah Mokhtar and My children Harith Iddin, Hannah Irdina Iddin, Hariz Iddin and Hadif Iddin who helped me to always stay positive throughout the duration of this project.

My appreciation goes to all employees especially in HSSE department in the selected oil and gas company for assisting and providing useful data and information regarding OHSAS 18001 implementation in the company which ease the completion of this project.

My heartfelt thanks goes to my supervisor, Dr Nasrin Aghamohammadi who was helpful and never stop in providing assistance, support and guidance. Not to forget, my course mate who also contributing in the completion of this research project.

وَصَلَّى اللهُ عَلَى مُحَمَّدٍ وَعَلَى آلِهِ وَصَحْبِهِ وَسَلَّمَ ، وَالْحَمْدُ لِلَّهِ رَبِّ الْعَالَمِينَ

TABLE OF CONTENTS

Abstract.....	iii
Abstrak.....	iv
Acknowledgements.....	v
Table of Contents.....	vi
List of Figures.....	viii
List of Tables.....	ix
List of Symbols and Abbreviations.....	x
List of Appendices.....	xi
CHAPTER 1: INTRODUCTION.....	1
1.1 Background of Occupational Health Safety Management System (OHSMS).....	1
1.2 TL Offshore Sdn Bhd.....	1
1.3 Research Background.....	2
1.4 Problem Statement.....	2
1.5 Objective & Scope.....	3
1.6 Outline of research report.....	3
CHAPTER 2: LITERATURE REVIEW.....	4
2.1 Oil and Gas industry and OHSMS Impact.....	4
2.2 Implementation Occupational Health and Safety Assessment Series (OHSAS).....	5
2.3 Walk-through Observation.....	5
2.4 OHSMS Audit Management Concepts.....	6
2.5 Benefits on OHSAS Implementation for TL Offshore Sdn Bhd.....	6

CHAPTER 3: METHODOLOGY	7
3.1 Study Area & Justification.....	8
3.2 Sampling Method and Data Collection.....	11
3.3 Internal Audits and Data Analysis.....	12
3.4 Identification significant business related with OHSMS.....	13
3.5 Occupational Assessment Data Analysis.....	13
CHAPTER 4: RESULT AND DISCUSSION	15
4.1 Walk-through Observation Findings.....	15
4.1.1 TLO Support Function-Head Office Sapura@Mines.....	15
4.1.2 OHSAS Assessment Finding in TLO Sdn Bhd.....	16
4.2 TLO Project/Operation- Barge QP2000.....	20
4.2.1 OHSAS Assessment Finding in TLO Project Operation-QP2000.....	21
4.3 HSE-MS OHSAS Elements.....	22
4.4 Recommendation.....	23
4.4.1 Occupational Safety Health Promotion Campaign.....	24
CHAPTER 5: CONCLUSION AND FUTURE RECOMMENDATION	25
5.1 Conclusion.....	25
References.....	26

LIST OF FIGURES

Figure 3.1: Research Process Flow Chart.....	8
Figure 3.2: TLO Organization Chart.....	9
Figure 3.3: HQ TLO Sdn Bhd.....	10
Figure 3.4: Location of Selection Project Site TLO Sdn Bhd.....	10
Figure 3.5: Quippo Prakash 2000.....	11
Figure 4.1: Fire Extinguisher Expired Date.....	15
Figure 4.2: Exit door bulb light faulty.....	16
Figure 4.3: Improper and Inadequate Office	16

LIST OF TABLES

Table 4.1: OHSAS Findings in TLO Support Function- HQ Office.....	17
Table 4.2: OHSAS Findings in TLO-Quippo Prakash QP2000.....	21

University of Malaya

LIST OF SYMBOLS AND ABBREVIATIONS

API	American Petroleum Institute
AS/NZS	Australian Standard/New Zealand Standard
BS	British Standard
BSI	British Standard Institute
HSE	Health, Safety and Environment
HSE-MS	Health, Safety and Environment Management System Manual
ILO	International Labour Office
ISO	International Standard Organization
LRQA	Lloyd's Register Quality Assurance Limited
Major NC	Major Nonconformance
Minor NC	Minor Nonconformance
MSV	Management Site Visit
OFI	Opportunity for Improvement
OH &S	Occupational Health and Safety
OHSAS	Occupational Health Safety Assessment Series
OHSMS	Occupational Health Safety Management System
PTW	Permit to Work
QP2000	Quippo Prakash 2000
SKPB	SapuraKencana Petroleum Berhad
TLO	Teknik Lengkap Offshore Sdn Bhd

LIST OF APPENDICES

Appendix 1: OHSAS 18001: 2007 Elements	28
Appendix 2: QUIPPO PRAKASH QP 2000 Barge Layout Plan.....	29

University of Malaya

CHAPTER 1: INTRODUCTION

1.1 Background of Occupational Health and Safety Management System (OHSMS)

The system of occupational safety and health well known as a good prevention of occupational injuries and occupational disease in the workplace. It shown that this system has been accepted and proven to manage occupational safety and health in the world (LaMontage et al.2004)

The ideal development of Occupational Safety, Health and Environment Management in organizations is referred to established International Standard of Occupational Health and Safety Assessment Series like OHSAS 18001 series. This OHSAS standard contains requirements that can be objectively audited based on ; (1) establishing an occupational health and safety management (OHMS); (2) implementing, maintaining and continually improving an OHSMS; (3) assuring itself of its conformance with stated in OHS policy; (4) demonstrating such conformance to others; (5) seeking certification/registration of its OHMS by an external organization. (Tsai et al, 2009)

1.2 Teknik Lengkap Offshore Sdn Bhd

Teknik Lengkap Offshore Sdn Bhd (TLO) is a full subsidiary of SapuraKencana Petroleum Berhad with its office at Sapura@Mines Seri Kembangan Selangor. The principles activities undertaken is domestic and international arm the transportation and installation of sub-sea pipeline and offshore structures and delivery of other related offshore services.

1.3 Research Background

Since its inception in 1990, TLO has been operating in Malaysia and actively venturing into International project since 2008 ranging from Asia Pacific to Australia, India including Middle East and Africa regions. TLO has installed over 2,000km of pipeline ranging from 102mm to 965mm in diameter at various water depth and has also installed many platforms (Ronalds, BF2005) including monopods, tripods, 4-legged and 8-legged jackets with multiple topside module and platform complete. TLO has carried out work for PETRONAS Carigali Sdn Bhd (PCSB) for the first time in 1997. From then, various contracts were awarded directly to TLO.

1.4 Problem Statement

Every establish companies may have dedicated more management time and resources to improve their OHSMS concerns. TLO often receives high pressure especially to abide with legal and other requirement, client requirement and expectation on OHSMS related with their own HSE-MS, need to inline with some requirement from Group Corporate and the most important is commitment from top management with objective and mission to ensure as far as practicable to be take care of safety, health and environment in their workplace and premises.

Despite issues and benefits about OHSAS implementation in industries especially in oil and gas industries already been identified, evaluate and comment, the benefits or impact from implementation OHSAS series about effective HSE management are focus in TLO Sdn Bhd Management.

1.5 Objectives and Scope

Study was conducted at two location at onshore and offshore activities and aims to review OHSM in TL Offshore Sdn Bhd.

The main objective of this case study are:

- a) To identify problem encounter during implementation OHSAS Series
- b) To identify benefits on implementing OHSAS Series in TLO Sdn Bhd

1.6 Outline of Research Approach

Background view on OHSMS, Problem and Benefits during Implementation OHSAS Series in TLO Sdn Bhd are studied through literature review in Chapter 2. Based on this, information on theories, models, materials and techniques that are used in previous research studies can be applied to current research.

Chapter 3 explains on methodology of study conducted to achieve objectives that were mentioned before. In order to learn the overall operation at TLO Sdn Bhd , a walk-through observation and audit was conducted. Concurrently, OHSAS assessment is organized in order to oversee OHSMS that is being in place at the site.

Findings from the walk-through observation and OHSAS assessment audit were generated and presented in Chapter 4 for result analysis. Chapter 5 discussed about recommendations to implementation that were highlighted in previous chapter. These recommendations are made based on priorities, benefits and limitation that arise in TLO Sdn Bhd for further improvements.

Chapter 6 explains about outcomes of research which highlighted satisfaction of specific research objectives, and also includes recommendations for future work

CHAPTER 2: LITERATURE REVIEW

2.1 Oil And Gas Industry and OHSMS impact

The oil discovery in Sarawak in 1910 marked the beginning of Malaysia's oil and gas industry. Since then foreign oil companies were attracted to invest in Malaysia which created numerous employment opportunities and skills transfer to thousands of Malaysian. Furthermore, in 2010, tax and investment incentives under the Petroleum Income Tax Act (PITA) were introduced to encourage oil and gas activities (Rahim and Liwan, 2012).

Malaysia's national oil and gas company, Petroliam Nasional Berhad (Petronas) holds exclusive ownership rights to oil and gas exploration production (E&P) projects in the country. Since its corporation in 1974, Petronas has developed into a world-renowned integrated international oil and gas company with presence in over 30 countries (Candiah, 2005).

The institution of implementing an Occupational Safety Management system at all workplace came into limelight, when 'Global Strategy on Occupational Safety and Health: Conclusions were adopted by the International Labour Conference' at its 91st session, 2003. The strategy advocates the application of a systems approach to the management of national systems.(ILO-OSH 2001)

Occupational safety management system is a comprehensive management system designed to manage safety element in the workplace. It include policy, objectives, plans, procedures, organization, responsibilities and other measures.(Major Hazard Facility 19 April 2017). This OHSMS is used in significant safety, including aviation, petroleum, chemical, electricity generation and other .

2.2 Implementation Occupational Health and Safety Assessment Series (OHSAS 18001) at TL Offshore Sdn Bhd

This study about implementation of OHSAS 18001 series actually has a similarity with a case study of hazard analysis by the printing industry (B. Fareeda Khodabocus, K.C Constantand) published online on February 2010.

TLO Sdn Bhd is one of the subsidiaries for SapuraKencana Petroleum Berhad. The Main business activities of this company are transportation, installation pipelines and offshore structure platforms. In oil and gas industries OSHMS is a mandatory requirement and shall be followed together with Malaysian laws such as Petroleum Development Act 1974.

2.3 Walk-through Observation

In a case study research, observation is the most frequent source of information. Based on a book written by Hancock & Algozzine (2016), there are five fundamental factors to be considered when conducting observations: (i) identify what need to observed to shed light on probable answers to research questions (ii) creating a list of features that need to be addressed during the observations (iii) gain admittance or access to the research study area; (iv) recognizing researcher's personal roles and biases related to the research and (v) following all ethical and legal requirements on research participations.

Observation methodology can be defined in two categories which is the structured and unstructured observation. For structured observation, it is a more discrete activity with predetermined schedules whilst for unstructured observation, it is used to understand (Mulhall, 2003) and interpret cultural behavior (e.g in anthropological studies) (Kawulich, 2005). An other term used by (Kothari, 2004) is the controlled and uncontrolled observation. The main aim of uncontrolled observations is to get a

spontaneous picture of activities or events while controlled observations have the tendency to use instruments as aid to accuracy and standardization.

Mulhall, (2003) also stated that primary reason for researcher to adopt observation method is to check whether what people say they do is the same as what they actually practices on site. Other than that, through observation, it can provide acumen between dual or groups, illustrates the whole pictures and captures context and processes.

2.4 OHSMS Audit Management Concepts

The concepts of OHSMS is how the company manages its activities that contribute an impact towards the safety management. It refers to the company Health and Safety Environment Management System (HSE-MS.)(ILO-OSH2001). TLO Sdn Bhd HSE-MS shall be implemented, maintained and meet the SKPB's and TLO's HSE Policies.

2.5 Benefits on OHSAS Implementation for TL Offshore Sdn Bhd

There are wide ranging benefits reported in previous studies in favour to oil and gas industries when adopting OHSAS Series. The benefits are : a) protecting employers from bad effects and accident of workplaces, providing of comfortable and safety work environment: b) increasing of employee motivation: c) decreasing of work and work power losing because of work accident and occupational diseases: d) taking with prevention and work environment, providing operation safety with removing of fire, explosion; e) adjusting of national and international regulations and standards; f) determining of sensitive about organization occupational safety in front of formal places (Karapetrovic et al, 2008).

CHAPTER 3: METHODOLOGY

According to the objectives of this study, this research is based on a case study. Case study is an exhaustive study of one or more objects, which allows its broad and profound knowledge. This method also is one of the ways to understand overall process and operation of an organization.

Most of the studies conducted are via literature review, interviews with related personnel either structured (interview tools are fixed) or semi-structured (tool updated on emerging data), observations (plant visit) and archival sources (documents review, historical records, organization chart etc.) (Barratt, Choi, & Li, 2011; De Sousa, 2015)

Although there is a recommendation by Miguel (2007) to use a collective of case studies to generate more accurate results, but a researcher argued that a single case study can also produce results in a rare event or serve as a revealing way (De Sousa, 2015). Besides that, with few numbers of cases, there is greater opportunity for depth of observation (Voss, Tsiriktsis, & Frohlich, 2002) .

In this event, a single case study was performed in order to obtain more detailed information on OHSMS process implementation of OHSAS at TL Offshore Sdn Bhd The research methodology that was adapted in this case study consists of the following processes:

- a) Walk-through observation on processes and activities on site
- b) Identification of physical and existing document in internal audit activities
- c) Assessing the occupational safety and health management system on site

Generally, gathering of information and research report preparation are illustrated in Figure 3.1 below:

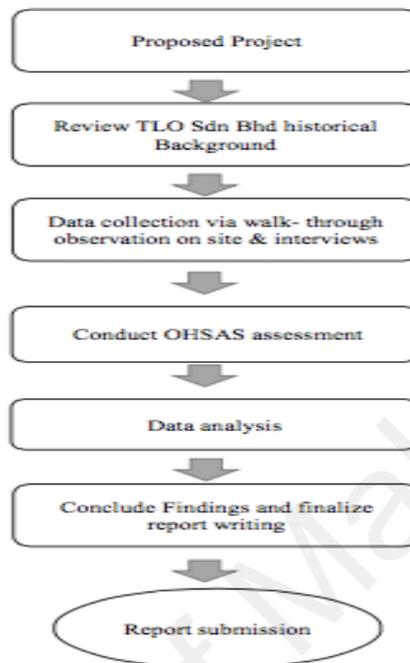


Figure.3.1: Research Process Flow Chart

3.1 Study area and Justification

The subsidiaries in SapuraKencana Petroleum Berhad that were subjected to this case study is a TLO Sdn Bhd. The typical organizational chart is divided into two divisions i.e. Project/Operation as shown in Figure 3.2 below

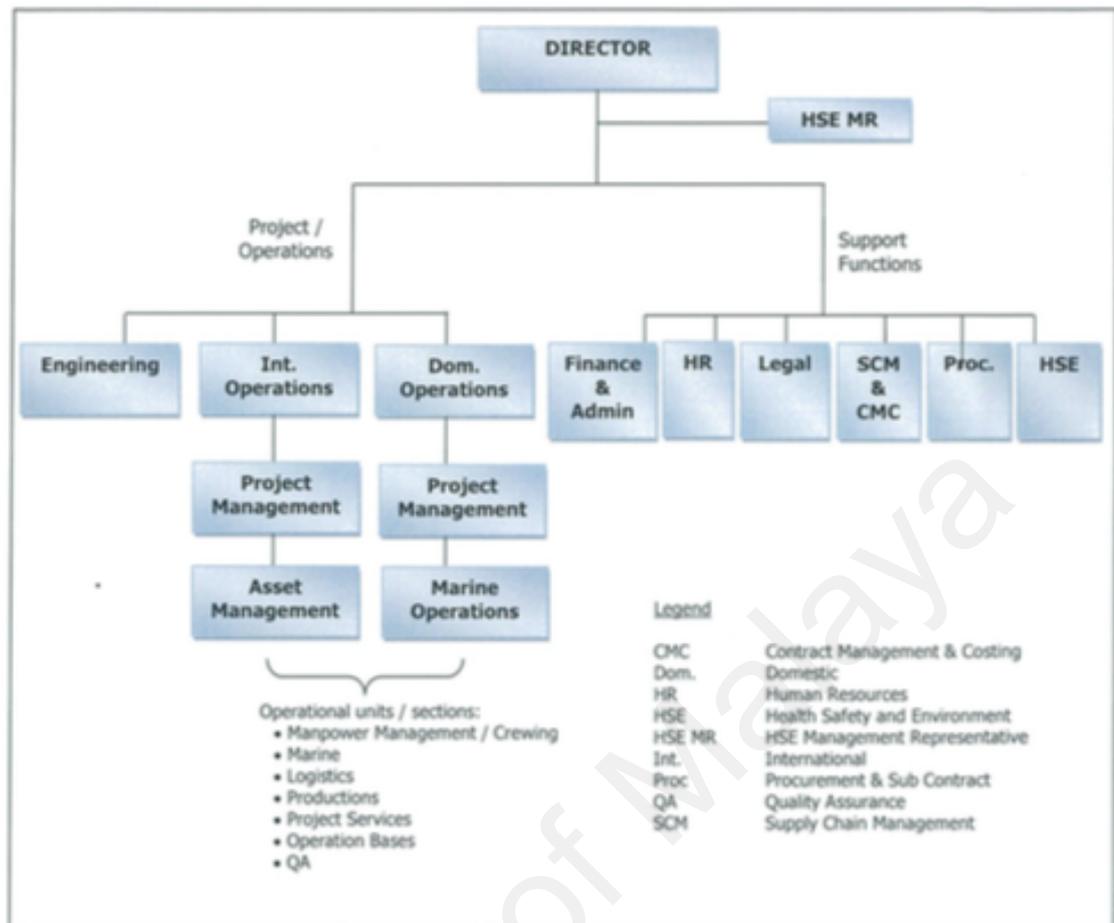


Figure 3.2 : TLO Organization Chart

TLO Support Function and Project Operations- is chosen as the focus of this case study because of the main aspects as following:

a) Years of establishment

TLO Sdn Bhd has operated more than 20 years in business, making it to experience more mature and systematic on HSE management. Besides that, as one of the top player in oil and gas industries onshore and offshore in Malaysia, TLO Sdn Bhd also has to maintain good reputation in term of business and HSE matters.

b) Location

Support Function (Head Quarters Office)

Located at one of the busiest highways in Kuala Lumpur. The location map of this TLO Sdn Bhd is shown in Figure 3.3 below.



Figure 3.3 Head Quarters TLO Sdn Bhd

Project Operation- Domestic

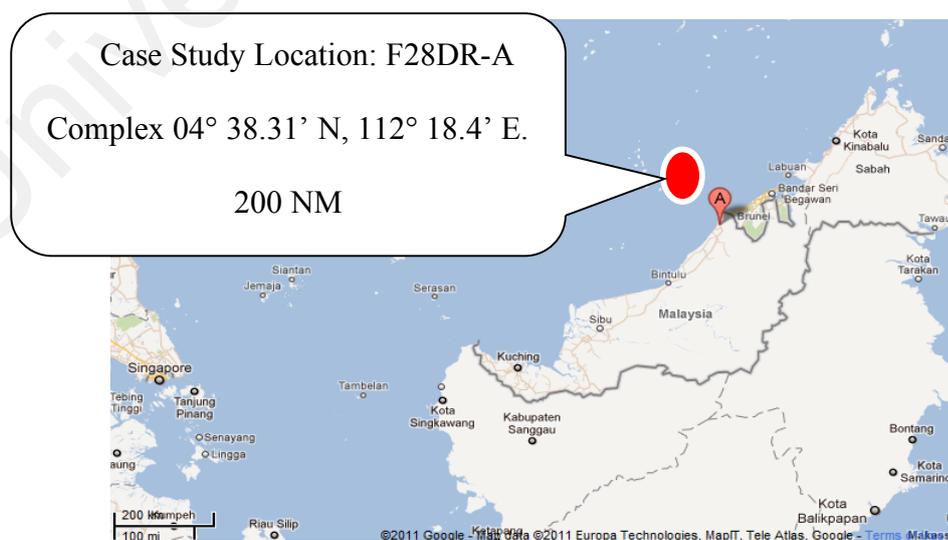


Figure 3.4 Location of Selection Project Site TLO Sdn Bhd

c) Activities area and facilities selected

Location as shown in Figures 3.5 are the recent Project site location for Barge Quippo Prakash (QP) 2000. Research study was conducted at this location area and to identify problem and benefits on implementation OHSAS during the walk-through observations.



Figure 3.5 Quippo Prakash (QP) 2000 Barge Vessel

3.2 Sampling Method and Data Collection

Observation was conducted together with data collection during 6 months duration of research study. TL Offshore Sdn Bhd was chosen as subject of this study because of limited access to other subsidiaries within the vicinity to gain in depth information of OHS Management System.

Data and information on the TLO Sdn Bhd background history, operational standard and practices, internal guidelines and policies were obtained from the management for reviewing purposes. The revision was in order to familiarize with terms and definitions used in the TLO Sdn Bhd operation as well to understand applicability of legal and other requirements that they must adhere to. At the same time, an assessment checklist was

deliberately designed to suit the management and operation of TLO Sdn Bhd HSE-MS. (ILO-OSH-2001)

Site visits to TLO Project Operations – Barge QP2000 as shown in Figures 3.4 was organized by Group Corporate HSE for first party audit for TLO Project HSE Plan and agreed by Client Project Contract owner. The objective is to verify/assess the implementation of HSE practices base on TLO Sdn Bhd and SapuraKencana Petroleum Berhad HSE-MS, to verify compliance to applicable legislation, standards and other HSE requirement and to identify gaps as means for continual improvement.

Site visits were also conducted at TLO Support function – Head office at Seri Kembangan Selangor. This event is for HSE level 2 assurance exercises. The objective also to verify/ assess the implementation of HSE practices based on TLO Sdn Bhd and SapuraKencana Petroleum Berhad HSE-MS, to verify compliance to applicable legislation, standards and other HSE requirement and to identify gaps as means for continual improvement.

These activities were captured in camera as samples and are presented in Chapter 4 as observations/audit findings result.

3.3 Internal Audit and Data Analysis

Data collected from internal audits are collected and picture taken during site visits. These pictures findings are grouped according to two areas : (i) Support Function (Head Quarters Office) (ii) Project Operation- Barge QP2000

Summary of activities (from pictures taken) in these two area are tabulated to show finding and potential areas for improvement. To conclude the analysis, potential areas for improvement are presented to the management of TL Offshore for further implementation and improve toward certification of OHSAS Series.

3.4 Identification of significant and business related with OHSMS

From the walk-through observations, the problem and benefits implementation OHSAS series to the TLO Sdn Bhd operation were identified. The identification was analyzed visually during the site visits. Collected data from field notes and pictures taken were summarized in a table form to show types of results

3.5 OHS Assessment Data Analysis

An Occupational Health and Safety checklist which was adapted from the OHSAS 18001 was deliberately designed to accommodate relevant data for this study. Interviews, document checking and discussion with management were conducted in terms to define activities that impacted the Occupational Safety Health and Environment.

Main aspects assessed were on elements in the OHSAS 18001 are related all documents and maintenance records among other useful information gathered for this assessment.

Data obtained from the assessment are then summarized into three categories as follow:

- **Major Nonconformance (Major NC)** related to the absence or total breakdown of the system to meet requirement of ISO 14001. OHSAS18001 and TLO/SKPB HSEMS Documents
- **Minor Nonconformed (Minor NC)** for area assessed that did not fully conformed with the HSE-MS element requirements
- **Opportunity for Improvement (OFI)** for area assessed that may have the possibility for a better HSE management.

Findings from this assessment are analyzed and tabulated into categories as mentioned above which were used as gap analysis in generating suitable occupational health and safety management system approaches for the TL Offshore Sdn Bhd. The importance attached to audits was explored by Gallagher (2003), who found that experts in the safety field were concerned that the mere presence of an OHSMS, and especially of audit results, could give a false sense of security, and the picture they provide is distorted

University of Malaya

CHAPTER 4: RESULT AND DISCUSSION

This chapter summarized all the data and finding obtained from the work-through observation findings, internal audit finding based on OHSAS Series and HSE-MS conducted at TL Offshore Sdn Bhd

4.1 Walk-through Observation Findings

Findings from the observation made are shown in figure 4.1. below are mandatory and against Legal requirement such as Factories and Machinery Act (Safety, Health and Welfare) Regulation, 1970. For finding related with figure 4.2 and figure 4.3 the marked with areas that is a non-compliance and opportunity for improvement. The is based on categories of main safety impacts such as fire equipment, main access for emergency response and preparedness for TLO Head Quarters Office at Seri Kembangan

4.1.1 TLO Support Function-Head Quarter Office Sapura@Mines



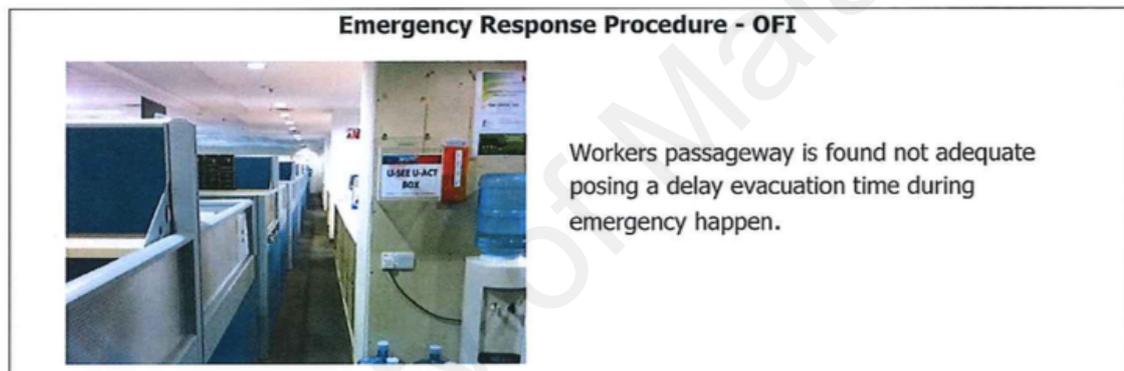
Figure 4.1 Fire Extinguisher expired date of inspection

Uniform Building By-Laws 1984



Non-compliance to by-law no. 172(4) - "Keluar" Sign on one of the exits in the TLO Office @ Mines - ground level has no lighted bulbs.

Figure 4.2 Exit Door Bulb Lamp Faulty



Workers passageway is found not adequate posing a delay evacuation time during emergency happen.

Figure 4.3 Improper and not adequate location of workplace

4.1.2 OHSAS Assessment Findings in TLO Support Function- HQ

Findings from the observation made are shown in Table 4.1. The table is based on categories of main OHSAS elements i.e hazard identification, risk assessment risk control & environmental aspects impact, Compliance to provision of Legal and other requirements, effectiveness of the HSE-MS with regards to achieving objective of HSE Policy, structure and responsibility, performance monitoring and measurement, competence, awareness and training, operational control, Emergency preparedness and response, Effectiveness of consultation, communication and reporting mechanism in

relation to HSE practices, incident investigation, Non compliance, Corrective Action, Preventive Action and Internal audit and management review.

Table 4.1 OHSAS Assessment Finding in TLO Sdn Bhd

Element	Findings	Area Coverage	CHSE recommendation
Hazard Identification, Risk Assessment & Determining Control	Lapses found in carrying out hazard identification, risk assessment and determining control	TLO	TLO to communicate lesson learnt to all section within TLO
Legal & Other Requirement	<p>1)Project lesson learnt on technical query-slow response from Technical query (TQ) team.</p> <p>2)has not update their legal and other requirement register (for overall TLO)</p> <p>3)Document from external parties (client& authority) pertaining to HSE legal requirement have not been identified, controlled and distributed to relevant personnel/function.</p>	TLO	<p>TLO to communicate Lesson learn to all section within TLO</p> <p>2) TLO to update HSE and other requirement register recommended to subscribe service provider in order to obtain legal and other requirements updates</p> <p>3) Effective document control and record keeping procedure to be implemented for distribution and communication of HSE Legal requirement.</p>
Objective & Programme (s)	<p>Overall program as expected to carried out has been pending for quite some time and not been executed</p> <p>Some of TLO management team did not participate in the Management Site Visit (MSV)</p> <p>TLO's milestone completion certificates does not include their HSE performance</p>	TLO	<p>1)TLO to execute the plan</p> <p>2)TLO management team to participate in MSV</p> <p>3)TLO to include HSE in routing process</p>

Table 4.1 continued

Element	Findings	Area Coverage	CHSE recommendation
Resource, Roles Responsibility & Authority	<p>1) HSEMS Documentation could not be assessed</p> <p>2) No clear responsibility to manage office safety</p> <p>3) Job description for onshore staff has not been customized to reflect their line of reporting</p>	TLO	<p>1)TLO to identify person in charge to manage HSE documents</p> <p>2) TLO to define responsibility to manage office safety as the tenancy agreement is signed by TLO</p> <p>3)TLO to revised job description to reflect line of reporting for these personnel</p>
Competence, Training and Awareness	<p>1)The training matrix has not been established to meet client, legal & other requirement</p> <p>2) TLO could not demonstrate full compliance with their contractual competency requirement for clients</p>	TLO	<p>1)TLO to establish training matrix (training need and training plan meeting client, legal and other requirements</p> <p>2)TLO to establish competency matrix based on minimum compliance requirement</p>
Communication, Participation and consultation	<p>1) Induction for new employees including HSE induction has only be conducted by corporate</p> <p>2)Lesson learnt from significant incident was not communicated</p>	TLO	<p>1)TLO to conduct induction specific to TLO arrangement</p> <p>2) TLO to communicate the HSE Flash</p>
Documentations , Control of document, Control of record	Lapses found on control of records	TLO	TLO to develop list of HSE records specific to TLO overall

Table 4.1 Continued

Element	Findings	Area Coverage	CHSE recommendation
Documentations Control of document, Control of record	TLO HSEMS are kept in shared drive/server	TLO	To ensure change and current revision status of document are identified and control
Operational Control	<p>1)Management of Change (MOC) for change in the design was not raised.</p> <p>2) Technical Evaluation Report were not made available during the audit</p> <p>3) Procedure for Awareness of HSEMS and Consequences did not specify on the consequences of HSE Violation.</p>	TLO	<p>1)TLO to align their MOC procedure as per SKPB MOC Procedure</p> <p>2)TLO to incorporate HSE criteria in the technical report</p> <p>3)TLO to develop comprehensive Consequence Management Procedure</p>
Emergency Preparedness & Response and Crisis Management	Tier 2 drill was not planned to be carried out since post merger. The role for onshore ECC Members were not clearly described in TLO procedures	TLO	1)TLO to ensure a fully-functioning ECC set-up
Evaluation of compliance	TLO has not evaluated their overall compliance to legal & other requirements	TLO	TLO to review and conduct evaluation of legal and other requirement
Incident Investigation	TLO incident report were not submit in time to CHSE	TLO	TLO submit all incident report with specific time frame

Table 4.1 continued

Element	Findings	Area Coverage	CHSE recommendation
Nonconformity, Corrective Action & Preventive Action	<p>During the audit, it was found that vendor has been shortlisted as sub-contractor of Manora Project</p> <p>Corrective and preventive actions from previous Internal Audit conducted have not satisfactory closed to date</p> <p>Corrective action from previous client contractor HSE Assurance Report have not be fully address</p>	TLO	<p>TLO to ensure audit findings for TLO subcontractor are closed within project time frame</p> <p>TLO to fully address the corrective action (PA) and Preventive Action (PA) as listed</p>
Internal Audit	<p>Internal audit conducted by Corporate and not by TLO</p> <p>TLO HSE Internal Audit Procedure did not specify competency of audit team member including lead auditor</p>	TLO	TLO to define frequency and responsibility and consequently conduct level 1 HSE internal Audit
Management Review	Management review were not conducted as per procedure	TLO	TLO to conduct annual Management review as per procedure

4.2 TLO Project/Operation- Barge QP2000

Site visits to TLO Project Operations – Barge QP2000 as shown in figures 3.3 was organized by Group Corporate HSE for first party audit for TLO Project HSE Plan and agreed by Client Project Contract owner. The objective is to verify/assess the implementation of HSE practices base on TLO Sdn Bhd and SapuraKencana Petroleum Berhad HSE-MS, to verify compliance to applicable legislation, standards and other HSE requirement and to identify gaps as means for continual improvement

4.2.1 OHSAS Assessment Findings in TLO Project Operation- QP2000

As stated in paragraph 4.1.2 the findings were assessed by OHSAS Assessment and the elements integrated with TLO Sdn Bhd and SapuraKencana HSE-MS. Table 4.2 shows the summary for observation and audit findings for QP2000 Operation activity

Table 4.2 TLO QP2000 Operation Observation/Audit Findings

Element	Findings	Person In Charge	Recommendations
Hazard And Effect Management Process	Daily toolbox meeting does not discuss activities hazards, risks and control measure involve JSA did not incorporate hazards, risk and control measure from the Hazard Identification (HAZID) exercise conducted	QP	
Legal and Other Requirement	<u>Environmental Quality (Scheduled Waste) Regulations 2005</u> TLO procedure for Site Waste Management has not been updated to incorporate requirement of Environmental Quality (schedule waste) 2005	TLO	
Resources, Roles, Responsibility, Accountability And Authority	Permit to work (PTW) controller/coordinator who is responsible for administration and maintenance of PTW system defined in TLO procedure has not been appointed leading serious deficiencies in the PTW implementation Personnel (including Barge Supritendant) on board were not aware of relevant HSE requirement	TLO QP	

Table 4.2 Continued

Element	Findings	Person In Charge	Recommendations
Competence, Training and Awareness	Non of the SERT team has attendant OERTL None of the firefighting team members has attended advanced firefighting training and helicopter firefighting training. The emergency manager an on scene commander has not attended MOME	TLO	
Operational Control	Serious Deficiencies in the implementation of PTW system where the implementation is not in accordance with TLO Procedure Lapses found in the management of medicine and Dangerous Drug in the clinic	QP	
Emergency Preparedness and Response	Tier 1 drills have been adequately carried out. However, tier 2 drill never been conducted with the onshore emergency management team		
Performance Measurement and Monitoring	Status of closure of action items raised from minutes of meetings, drill reports, walkabouts etc were not adequacy monitored to ensure proper action had been taken to rectify		

4.3 HSE-MS OHSAS Elements

Good safety management is the principle for safety management not limited to people working at workplace, it is also applicable to everyone who are at risk in their routine life. TLO Sdn Bhd subsidiaries to SapuraKencana Petroleum Berhad uses Du pont Ten principles of safety management in the company to enhance management to committed in managed OHSMS and related with HSE-MS.

The famous 10 Du Pont Ten Principles of Safety Management are go through into TLO HSE-MS towards Implementation OHSAS series are by this following principles:

- a) All injuries and occupational illness are preventable
- b) Management is directly responsible for doing this
- c) Safety is a condition of employment
- d) Training is required
- e) Safety audits and inspection must be carried out
- f) Deficiencies must be corrected promptly
- g) All unsafe practices, incidents and injury accident will be investigated
- h) Safety away from work is as important as safety at work
- i) Incident prevention is cost-effective the highest cost is human suffering
- j) Employee must be actively involved

Towards being establish and excellence reputation for leading in HSE Management in their organization, many industries especially oil and gas industry used this principles as key point in their objective and mission for continual improvement

4.4 Recommendation

Results obtained from the walk-through observation and the OHSAS assessment at site has founded even though any standards or any process has adopted in the organization, it still needs cooperation and commitment from top management during implement and continual improvement. There suitable and ideal recommendation for enhance safety culture in the organization by du pont principles are by the following:

4.4.1 Occupational Safety and Health Promotion Campaign

This campaign is related on how management involved and take seriousness about occupational health and safety in their organization and worker especially. In this campaign, the important is on how management reinforce health and safety message to their workers, clients, subcontractor, visitor and others. There are some good promotional technique for management to reinforce health safety message which is including

- a) **Lead by example** from top management and middle management to champion or to attend the OSH promotion campaign.
- b) **Management interactions**
- c) **Communication**

Safety message or any related with Health, Safety and Environment matters are more effectively and normally have fully attention from employees when top management or middle management take the responsibility and show the leadership movement in the organization.

CHAPTER 5: CONCLUSION AND FUTURE RECOMMENDATION

Overall, the management of TLO Sdn bhd is open to suggestion in term of improving their health, safety and environmental management. Specific objectives of this study that was prescribed in Chapter 1 previously are concluded in the research outcomes as follow:

- **Identifying problem encounter during Implementation OHSAS Series at TLO Sdn Bhd**

The walk-through observation and assessment exercise has open up a helpful information and input on environmental issues that the organization is facing. Based on findings from walk-through observation and internal audit base on OHSAS series assessment, this research is able to identified problem and benefits for implementation OHSAS Series in TL Offshore

- **Identifying Benefits Implementation OHSAS Series at TLO Sdn Bhd**

This research is able to identify benefits from observation and audit finding from TLO Sdn Bhd site activities that associated to OHSAS Assessment checklist to identify any lapses in HSE-MS either subsidiaries nor SapuraKencana Petroleum Berhad HSE-MS

Recommendation for Future Work

When discussion about implementation, varieties of standards in one organization are much appreciated in oil and gas industries. The suitable recommendation for TLO Sdn Bhd to enhance OSHMS management and to become one of the good competitor in the world are the Integrated Management system (IMS) which is Quality Management system (QMS), Environment Management System (EMS) and Safety Management System (SMS) together in one management systems.

REFERENCES

- Advisory, G. R. Safety Guidelines for Consumers. *American Petroleum Institute, Washington (3 Feb. 2000)*.
- American Petroleum Institute. 1998. API 9100A *'Model environmental, health and safety management systems*. Washington : API
- British Standard Institute. 1996.BS 8800. *Guide to Occupational health and Safety Management System*. London: HMSO
- British Standard Institute. 1996.BS 8800. *Specification for health and Safety Management System*. London: HMSO
- British Standard Institute. 2000. New British Standard in 2000. (atas talian) <http://www/bsonline.techindex.co.uk/BSONLINE/whatsNew.asp>. (10 April 2002)
- Denis, 1997. *Quality, safety and environmental synergy in the 21st century*. Milwaukee: ASQC Quality Press
- Honkansalo, A. 2000. *Occupational health and safety and environmental management system*: Environmental Science Policy. 3:39-45
- International Labour Office. 2001.*Guidelines on occupational safety and health management system*. Geneva
- International Labour Office. 2002. *Implementation guidance manual for the ILO guidelines on occupational safety and health management system* ILO-OSH. Geneva
- International Organization for Standardisation. 2002g. ISO gives thumbs up to standards for personal financial planning adviser, thumbs down to occupational health and safety work. (atas talian) <http://www.iso.ch/presse/TMBe.htm>. (27 Jun 2002).
- Joe, T. K, 1999. OSHA's proposed safety and health programme rules. Elsevier Science Inc.
- Kadir Arifin & Jamaludin Abd Jahi (2002). Keselamatan pekerja dan pengurusannya di Malaysia. *Proceeding of Environmental Management 2002*.hlm 379-387.
- Kadir Arifin, Jamaludin Md Jahi, Abu Bakar Che man, Ismail Bahari & Abd Rahim Md Nor (2003b). *Perlaksanaan Sistem Pengurusan Keselamatan dan Kesihatan Pekerjaan (OHSAS 18001:1999) di Malaysia- Isu dan cabaran prosiding pengurusan persekitaran*.hlm 107-115
- Kadir Arifin (2004).*Integrasi siri sistem pengurusan kualiti (ISO 9001:2000), siri sistem pengurusan alam sekitar (ISO 14001:1996), siri sistem pengurusan keselamatan dan kesihatan pekerjaan (OHSAS 18001:1999). Ke Arah Perlaksanaan dan pembentukannya di Malaysia*. Tesis Dr Falsafah. Universiti Kebangsaan Malaysia

LaMontage, A.D., Barbeau, E., Youngstrom, R.A., Lewiton, M., Stoddard, A.M., McLellan, D., Wallace, L.M & Sorenson, G 2004. Assessing and intervening on OSH programmes: effectiveness and evaluation on the Wellwork- 2 intervention in 15 manufacturing worksites. *Occup Environ Med* 61: 651-660.

Lloyd's Register Quality Assurance Limited 1999. Review. June (atas talian) <http://www.irqa.com/publications/index.html>. (7 Oktober 2000)

Rahimah Ismail & Zulkifly Osman.1996. Pembangunan sumber manusia.Dlm Zaini Mahbar & Mohairi Tajuddin (pnyt) *Industrialisasi dan Pembangunan*.hlm. 50-74.
Bangi : Penerbit Universiti Kebangsaan Malaysia

Renfrew, D. & Muir, G . 1998. Quenching the thirst for integration. *Quality World*. 24: 10-13

Rosner, D, & Markowitz, G. 1987. *Dying for work. Worker Safety and Health in Twenty Century America*. Bloomington: Indiana University Press

Shamsul Efendi Dismal. 2001.OHSAS 18001: Implementation at SMIs to improve safety, health and productivity. Kertas kerja 4th National Conference and Exhibition on OSH anjuran NIOSH, MINES, Selangor. 7-8 Ogos

SIRIM 2002. Occupational health and safety management system scheme (OHSAS 18001).shah alam

Smith, D. A ., Hunt, G. & Green, C. 1998. *H88 managing safety the BS8800 way, implementing a cost effective management system for occupational health and safety*. London: British Standard Institute

Smith, D.A 1996. Occupational health and safety and environmental management.

Standard Australia International.1999. AS/NZS 4581:1999. *Management System Integration-Guidance to Business, Government and Community Organization*.Strathfield.

Stapleton, P.J., Cooney, A.M. & Hix Jr, W.M 1996. *Environmental management system: an implementation guide for small and medium-sized organisation*

University of Malaya