



اَوْنِيْتِي تِكْنُوْلُوْجِي مَارَا
UNIVERSITI
TEKNOLOGI
MARA



INDUSTRIAL TRAINING FINAL REPORT SESSION: FEBRUARY – AUGUST 2022

Student Name : Raihah Nashiera Binti Ashari

ID Number : 2019404612

Student E-mail :

Handphone Number

Organization Name : ReliaCraft Engineering Sdn Bhd

Address Organization : No 2, Jalan Perindustrian Suntrack Off, Jalan P1A, Seksyen 13, Bandar Baru Bangi, 43000, Kajang Selangor.

Supervisor Name : Muhamad Fadzil Bin Abdul Bahar

Department During Attachment : Engineering

Duration (Date) : 24th February 2022 – 5th August 2022

Lecturer Evaluation : Nurul Hazwani Sabri

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ABSTRACT

Industrial Training is a type of higher education for university students in their final semester, where they can obtain experience working in a company and learn about real-world situations before pursuing a career as an engineer. Both knowledge and technical skills are required since they allow students to practise and apply their knowledge in their subject areas during internship. As a result, it also assists students with their soft skills by boosting their capacity to collaborate with others, which can help them advance their career.

This report describes a six-month industrial training that took place from 24th February 2022 to 5th August 2022 which about 24 weeks at a company named ReliaCraft Engineering Sdn Bhd in Bandar Baru Bangi, Selangor. In this report, it contains 5 chapters and the content of all chapters are broadly explained.

During the industrial training, one of the tasks given is generating illustration camera tripod for Gas Detection at high LEL level. I managed to use my knowledge when learning drawing during semester 1 to 4. Finally, students were exposed to real working culture and industrial practise during their 24-week internship. In addition, through troubleshooting problems and discovering solutions, student can increase both theoretical and practical skills.

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CHAPTER 1

INTRODUCTION OF INDUSTRIAL TRAINING

1.1 Overview

The Industrial Training Program is a learning activity that takes place outside of the university setting, allowing students to get experience in a real-world setting. This industrial training is a real-world job training programme that allows participants to get experience in applying current industry knowledge through the work they do. Students must complete industrial training to receive a certificate or diploma upon graduation. For students in higher education, industrial training is required for all programmes at universities, including Universiti Teknologi Mara (UiTM) branch in Pasir Gudang. The strategy was introduced to increase the qualifications of the essential industrial training to improve the working level of graduates.

Courses in industrial training (IT) provide students with learning chances in the workplace so they can gain real-world experience and increase market trustworthiness. The industrial training aids in producing chemical engineering technician graduates with excellent technical skill and soft skill competency when it comes to preparing the students as engineering technicians. Since all core and elective theories can be utilised in industrial training, it is expected that students would be able to approach problems and projects given to them by supervisors in original and creative ways.

1.2 Objective of Industrial Training

The primary goal of industrial training is to expose students to a real-world work setting in which they may develop their knowledge and put what they've learned in university into practise. Students were able to improve their communication and technical abilities during this industrial training. Communication skills are critical for students because they demonstrate that they can form positive relationships and collaborate effectively with others. Technical skills enable students to perform more efficiently and confidently because people with technical skills are more confident when confronted with unexpectedly situations.

1.3 Industrial Training Placement

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1.3.1 Industrial Schedule

Normal Working Hours	8 hours
Day of Working	5 days a week
Work In	8:30 am / 9:00 am
Break Hour	Monday – Thursday: 1:30 pm – 2:30 pm Friday: 1:00 pm – 2:30 pm
Work Out	5:00 pm / 5:30 pm

Table 1: Industrial Schedule

1.3.2 Company Supervisor Information

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CHAPTER 2

COMPANY PROFILE

2.1 Company Background

ReliaCraft Engineering Sdn Bhd was incorporated in July 2007 with focus to provide technical and services in *Condition Based Monitoring, Risk Based Inspection, Leak Detection & Repair(LDAR), Basic & Advance NDT Services, Rope Access* and other advance engineering studies such as *Finite Element Analysis (FEA), Modal Analysis and Operational Deflection Shape (ODS)*.

To cater the need for safety and protection system we provide high end solution to Malaysian military, Malaysian Royal Police, Fire and rescue team by providing the vital solution such as robotics mine clearance and firefighting systems, weaponries, and anti-drone technology to suit their need.

With IT as the backbone of our operations/services, we have also taken full advantage of our expertise and business networking by offering *software and hardware supply, desktop virtualization, maintenance, and repair services*.

As to date, we have proudly served highly technology-driven organizations such as *PETRONAS, ExxonMobil, Shell, Sapura, Petrofac, Repsol, PDRM, BOMBA, Malaysian Ministry of Defence (STRIDE), MOHA (Minister of Home Affair)* and to name a few; and have also won trusts to be appointed as representative for internationally established organizations such as *IDS Ingegneria Dei Sistemi (Italy), LDARtools (USA), Gas Imaging Technology LLC (USA); DOKING (Croatia), and HS Produkt (Croatia)*.

2.2 Company History

ReliaCraft Engineering Sdn Bhd is a company in Malaysia, with a head office in Kajang. It operates in the Mining, Quarrying and Oil & Gas Extraction sector. It was first established on July 31, 2007. In 2020, the company reported a net sales revenue increase of 9.34%. Its total assets recorded a growth of 3.94%. ReliaCraft Engineering Sdn Bhd's net profit margin decreased by 1.52% in 2020.

2.3 Vision and Mission

VISION

“The most reliable NDT service provider for PETRONAS and major Oil and Gas industry in Malaysia.”

MISSION

- To provide technical and services in Condition Based Monitoring, Risk Based Inspection, Gas Loss of Containment Services (GLOCS), Basic & Advance NDT services and other advanced engineering studies such as Finite Element Analysis (FEA), Modal Analysis and Operation Deflection Shape (ODS).

2.3.1 Organization Chart

ORGANISATION CHART RELIACRAFT ENGINEERING SDN BHD

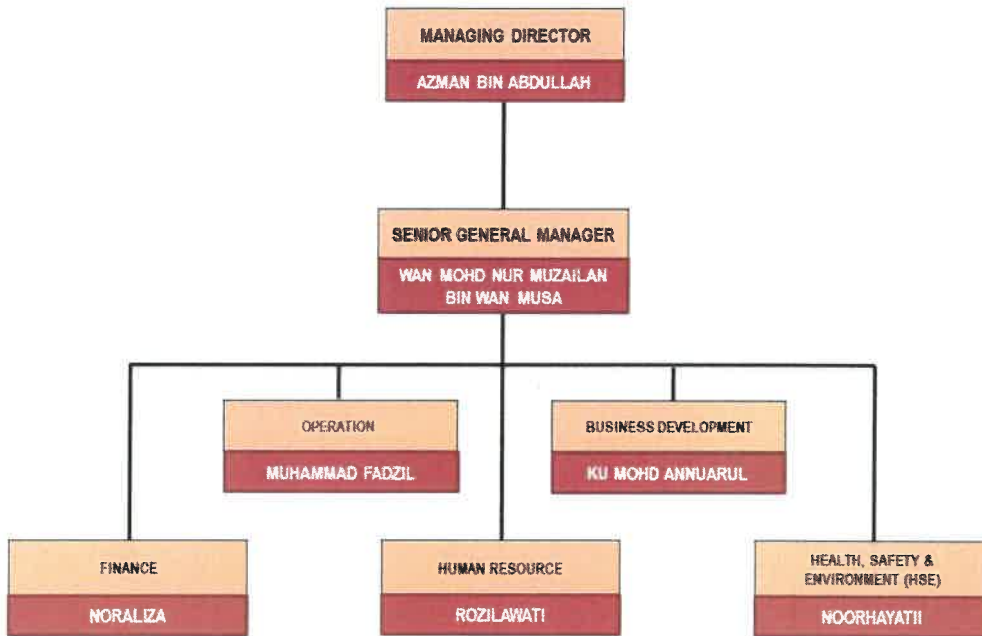
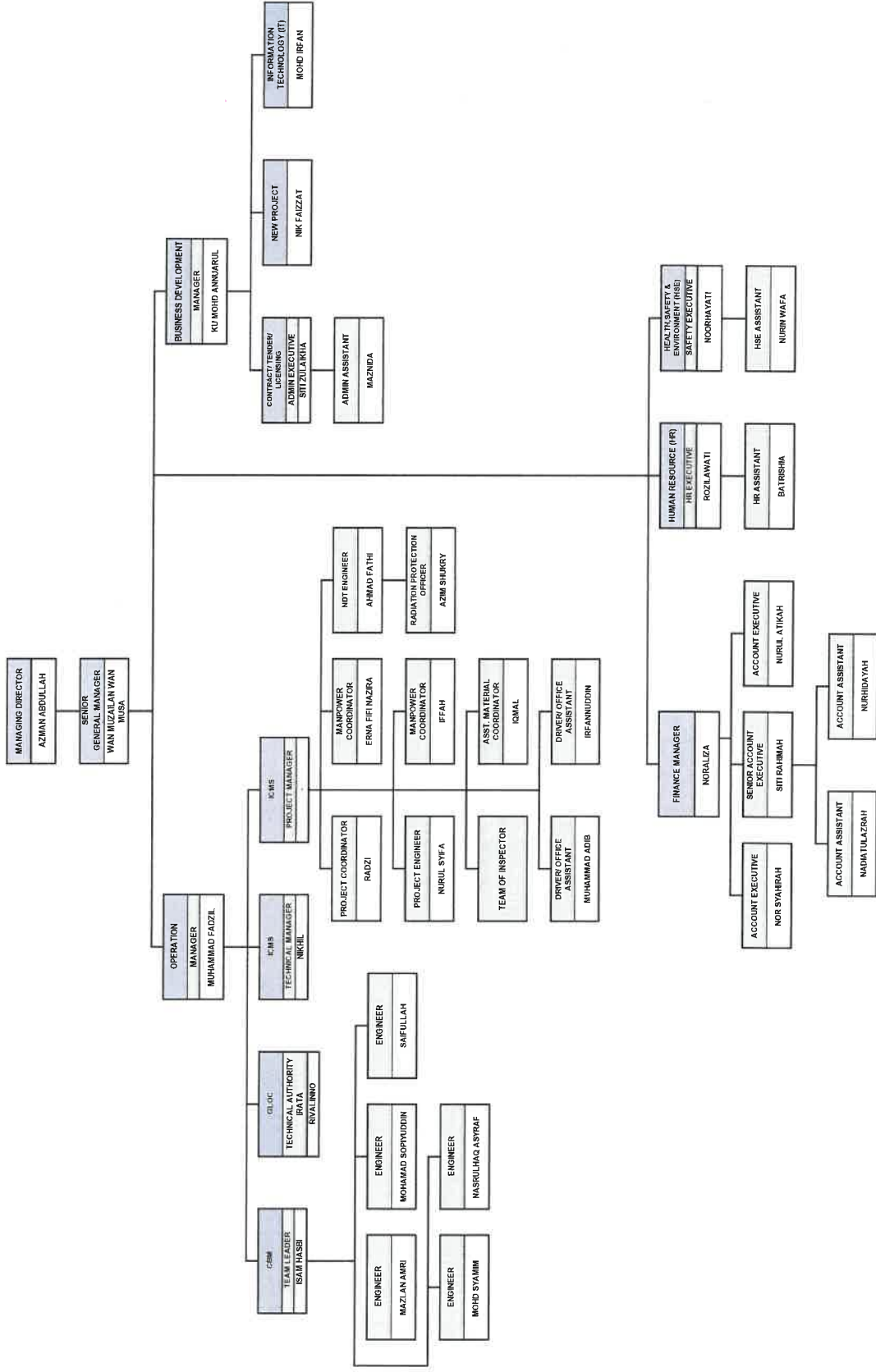


Figure 1: Organization Chart

ORGANIZATION CHART RELIACRAFT ENGINEERING SDN BHD



2.4 Main Product / Services Provided to the Client

Key Business Activities

- **Inspection Services**
 - Leak Detection & Repair Services (LDAR)
 - Condition Based Maintenance
 - Advance Vibration Monitoring & Analysis
 - Inspection & Corrosion Monitoring Services
 - Rope Access Services

- **Advance Technology Supply and Services**
 - Robotics
 - Anti UAV's / Drones
 - Weaponries

- **Information Technology**
 - Application / Solution development
 - Hardware / Peripherals solution
 - Networking infrastructure solutions
 - Professional and consulting services
 - Training and Workshops

SERVICES BY RELIACRAFT ENGINEERING SDN BHD

- **Inspection & Maintenance Services**

- i. Condition Based Maintenance**

ReliaCraft provides a complete Condition Based Maintenance services. By adopting multiple CBM methodologies and/or techniques, RCE will be able to detect early signs of misalignment, out-of-balance, mechanical looseness, poor lubrication, bent shafts, motor current faults or bearing damage it causes machine breakdown.

ReliaCraft can offer regular or periodic vibration analysis on plant equipment (as part of a predictive maintenance program) or one-off investigations to determine the cause of the problem. RCE reports are designed to be simple to understand with no jargon to interpret.

To complement vibration analysis as their main CBM methodology, RCE also offer infrared thermal imaging, laser alignment, balancing, ultrasonic testing and lube oil analysis (on-site and off-site) services.

- ii. Gas Loss of Containment Services (GLOCS)**

ReliaCraft strives to provide industry best practice for gas leak detection. Being the provider for gas leak detection services, RCE quickly realizes a common loophole that just makes the leak detection and repair activities futile – that there is lack of data for trending and monitoring purposes. Prompting from this vacuum, RCE add value to their inspection services by offering database setting-up and management for the clients. With an extensive and proper database management, RCE able to offer our clients and plan their improvement activities, rather than keep on repeating the same rectification or repair activities.

By taking advantages of RCE capabilities above, you should be able to steer your organization towards:

- a) Optimized Plant Maintenance Performance
- b) Increased Plant Safety
- c) Reduced Production Losses
- d) Increased Production Efficiency
- e) Reduced Leak Emission to the Environment
- f) Accurate Leak Data Reporting & Analysis
- g) Improved Asset Management
- h) Creating Best Practice in Leak Management

- **Inspection & Corrosion Monitoring Services**

- i) **NDT Services**

ReliaCraft provides a basic NDT services to cater the regulatory need for Oil & Gas sector from UTG, MT / PT, Radiographic Testing, and other basic NDT services as well. ReliaCraft can offer regular or periodic NDT analysis on plant equipment (as part of a schedule inspection maintenance program). The reports are designed to be simple to understand with no jargon to interpret. To complement NDT services as the main inspection methodology, RCE also offer manpower supply of the inspection personnel, equipment supply & rental and NDT abseiling inspection services.

- ii) **Advance NDT Services**

ReliaCraft strives to provide more advance and high-end inspection services. Such as in area, RCE is the first company to introduce the UAV's flare and structural inspection service to Petronas, RCE do also provide CUI X-Ray Imaging services and other related services such as internal corrosion monitoring activity.

Key Benefit of these activities are:

- Easily pin-point corrosion on pipelines
- Real time
- Safe and reliable
- Accurate
- Saves time compared to conventional method
- Increase Plant Safety

- **Advance Technology Supply and Services**

- i) **Supply & Services**

ReliaCraft provides a solution to the client by delivering the needs for safety, protection, and defence solutions for the government body. To suit with today needs, RCE provide various ranging product to support for our law enforcement bodies, military, fire, rescue team and defence. Such product that RCE supply are unmanned mine clearing and firefighting robots, HF communications radio, anti-drone system, weaponries etc.

List of products that ReliaCraft Engineering carry

1) Robotics mine clearing and firefighting systems

- Design for harmful, hazardous, and dangerous environment.
- Unmanned and can be controlled from distance (up to 1500m).
- Built in camera, firefighting system, and GPS.
- Able to survive mine detonations

2) Anti-Drone System

- Provide hostile and unauthorized use of UAV's.
- Able to detect both fixed wing and rotorcraft.
- Provides 360-degree protection coverage.
- Incorporated with turret and multiband jammer
- Neutralize all hostile UAV's.

3) Weaponries

- RCE provide various range of semi-automatic pistol and corner short weapon.
- Advance engineering and ergonomics usage.

- **IT Services: Supply, Services, Integration and Training**

- The Information Technology team sum up all the necessary data and information as to provide a solid and efficient foundation in managing data and information for reliability and up to date solutions.
- R&D and Software development as well as system integrations are very much tailor-made to the client's needs and requirements.
- Designs, integrates, and markets advanced technology products and services to the customers.
- Designs, develops, and integrates application/solution to fit our customer's needs.
- Supply a wide range of products in Information Technology such as:
 - Hardware / Software / Peripherals
 - Cabling and Networking Equipment
 - Office Equipment
 - Lab Equipment
 - Technology Machineries
- Provide professional & consulting services to the customers.
- Provide training in accordance to the products/Solutions:
 - Product Training
 - New Technology Training
- Wired / Wireless Network CCTV Surveillance Systems
- Building Security Systems: Security Card Access Systems

CHAPTER 3

OVERVIEW OF THE TRAINING

3.1 Introduction

During 24 weeks of the training, variety of jobs are provided by ReliaCraft Engineering Sdn Bhd. Most of the tasks given to me were documentation. So, I rarely went outside of the office except for a few times. For example, I had to key in the data provided into the Excel or prepared a workpack for upcoming jobs. Summary of my tasks during my internship are listed below.

3.2 Summary of The Training and Experience Gained

3.2.1 Tasks Given During Industrial Training

These are the only duties and tasks that I'm doing throughout the industrial training.

TASK 1: Listing down the List of Training Certificate of the workers/staff.

This task was handled by me under the guidance of Miss Nurin, an HSE assistant. The list must include all the training provided such as TBOSIET, LPS, FFW and SSHE Induction. For those who have reaching the expiry date, I must highlight the name and the training and make another list in Word to give it to Mrs. Hayati, a safety executive.

TASK 2: Learned about the process of DPI at EFD Induction Oil and Gas Sdn Bhd.

Mr. Fathi asked me and Miss Nurin to follow Mr. Nikhil to EFD Induction Oil and Gas Sdn Bhd in Shah Alam to watch him performed Dye Penetrant Testing on steam drum and mud drum.

TASK 3: Attended Oil and Gas Safety Passport Training at NIOSH

I have attended the Oil and Gas Safety Passport training at NIOSH on 14th March 2022 to receive the OGSP card. I learned a lot about safety regulations at the training. Before receiving the card at the end of the training, they conducted a small test to make sure the participants understand well about the training.

TASK 4: Create an illustration for Opgal Gas Detection Camera Tripod

Mr. Fadzil conducted me to create an illustration for a tripod camera used in Gas Detection. I managed to create the illustration using the knowledge about drawing I learned during part 1 until part 5. I created that in an AutoCAD under Miss Nurin's guideline. After a few try and error, the drawing was finally approved and being added to the slides prepared by Mr. Nu'man for presentation.

TASK 5: Finding the quotation for items and equipments needed in a tender.

There are few tenders that requires us to provide the price for items needed. My first task is to find the quote for flexible hose and hose coupling in a tender exercise by Malaysia Marine & Heavy Engineering (MMHE). Next, tender exercise by Tenaga Nasional Berhad (TNB) for GT1A Major Overhaul at SJTJ Port Dickson. Lastly, tender by Petronas CariGali Sdn Bhd.

TASK 6: Extract the valves in a drawing into an Excel

For my last month of internship, Mr. Fadzil handed me this task which I had to extract each equipment like valves and flanges in a drawing provided. There were 7 locations for the Gas Leak Inspection. Each location consists of few drawings and I needed to key in the details in an Excel. The locations are WHA, WHB, WHC, WHD, Kesumba, Zetung, and Anggerik. The deadline for this task was before I ended my internship at ReliaCraft Engineering Sdn. Bhd.

3.2.2 WEEKLY ACTIVITY

Week and Date	Weekly Summary
Week 1 (24 th February – 25 th February)	<ul style="list-style-type: none"> ➤ Reporting for Industrial Training at ReliaCraft Engineering Sdn Bhd. ➤ Briefing from Puan Rozilawati, Head of Human Resource about rules and regulations. ➤ Meet and greet with the company employees ➤ Short meeting with supervisor, Mr. Fadzil and Mr. Ku Annuarul about background of the company. ➤ Studying about services provided in ReliaCraft Engineering Sdn Bhd with Mr. Fathi, an RPO engineer. He brought me to Malaysia Nuclear Agency to teach me how to receive and bring OSL (a badge used for radiography testing).
Week 2 (28 th February – 4 th March)	<ul style="list-style-type: none"> ➤ Assist Miss Nurin, an HSE assistant to key in data and compiled the reports. ➤ Prepare a slide presentation for NDT Testing for a better understanding. ➤ Assist on doing workpack for Borescope Inspection's project on March.
Week 3 (7 th March – 11 th March)	<ul style="list-style-type: none"> ➤ Attended Oil and Gas Safety Passport course at NIOSH, Bangi. ➤ Went to EFD Induction Oil and Gas Service Sdn Bhd to watch how to perform Dye- Penetrant Inspection by Mr. Nikhil, an ASNT NDT Level III.

	<ul style="list-style-type: none"> ➤ Working on the report for DPI on Mud and Steam Drum and handed the report the client which is RNWA Engineering.
<p>Week 4 (14th March – 18th March)</p>	<ul style="list-style-type: none"> ➤ Received some notes from Mr. Nikhil about Magnetic Particle Inspection (MPI) and Dye- Penetrant Testing (DPI) for my reference. ➤ List down the items and documents related to safety for TNB tender. ➤ Assist Mrs. Syifa amend a workpack – Borescope Internal Inspection in WD MOPU. ➤ Prepare a timesheet for a quasi. ➤ Went to APM Sinaran Utama Teknologi to send 3 new survey meters to be calibrated. ➤ Follow up with Mr. Haris, PIC of GTEC NDT Supplies regarding the procurement of a radiographic source. ➤ Study on the notes given for a pre mock-up.
<p>Week 5 (21st March – 25th March)</p>	<ul style="list-style-type: none"> ➤ Went to Malaysia Nuclear Agency to receive the new OSL. ➤ Ordered Dyneema Gloves for Paka's branch from SafetyLab Sdn Bhd. ➤ Attended a pre mock-up by Mr. Nasrulhaq and Mr. Saifullah. Both are senior service engineers.
<p>Week 6 (28th March – 1st April)</p>	<ul style="list-style-type: none"> ➤ Mr. Fathi asked me to inquire about the surveyometers's calibration with APM. ➤ Received the report procedure for both testing via email after the pre mock-up.

	<ul style="list-style-type: none"> ➤ Miss Nurin instructed me to review safety related documentation for MRCSB's tender period contract for LDAR Inspection Services. ➤ Construct an organizational chart for the LDAR Operational team.
<p>Week 7</p> <p>(4th April – 8th April)</p>	<ul style="list-style-type: none"> ➤ Mr. Fadzil gave the go-ahead to create an AutoCAD illustration for an Opgal Gas Detection Camera Tripod. ➤ Creating a few drafts and send it to Mr. Fadzil for approval. ➤ Received the slide presentation for Opgal Gas Detection.
<p>Week 8</p> <p>(11th April – 15th April)</p>	<ul style="list-style-type: none"> ➤ Booked a hall at Sungai Udang, Melaka for a mock-up. ➤ Mr. Fadzil instructed me to look for a quote for supply of flexible hoses and couplings. ➤ Mark-up the prices to 20% and emailed the total price to Mrs. Maznida for preparation of Purchase Order.
<p>Week 9</p> <p>(18th April – 22nd April)</p>	<ul style="list-style-type: none"> ➤ Helped Miss Nurin get it touch with MS Screening to conduct a criminal and 5-years background check on 20 personnel.
<p>Week 10</p> <p>(25th April – 29th April)</p>	<ul style="list-style-type: none"> ➤ Miss Nurin requested me to review the list of certificates and flag out anyone whose training are nearly expiry date. ➤ Assist on workpack – GVI for Structure Inspection at West Desaru MOPU. ➤ Prepared a workpack – Vibration Monitoring by Petronas CariGali Sdn Bhd at FSO Sepat.
<p>Week 11</p>	

(2 nd May – 6 th May)	<ul style="list-style-type: none"> ➤ Raya Break
Week 12 (9 th May – 13 th May)	<ul style="list-style-type: none"> ➤ I was assigned the task to locate the quote for tender (Supply Consumables SJTJ in Port Dickson) ➤ Submit the quotation to Mrs. Maznida for preparation of Purchase Order.
Week 13 (16 th May – 20 th May)	<ul style="list-style-type: none"> ➤ Miss Nurin asked to search the price of a flame detector. ➤ Assist on workpack given by Mrs. Syifa and added some drawings given into the workpack. ➤ Went to APM to send a new survey meter for calibration.
Week 14 (23 rd May – 27 th May)	<ul style="list-style-type: none"> ➤ Petrofac returned the workpack for some amendment. ➤ Create a new project timeline with Mrs. Syifa. ➤ Looked for a quote for Personal Digital Assistant (PDA), a handheld PC. ➤ Send the quotation to Mrs. Maznida to proceed for order.
Week 15 (30 th May – 3 rd June)	<ul style="list-style-type: none"> ➤ Mr. Fadzil requested a quote for a product called “Wrench Spanner Proto Brand” ➤ Get in touch with Mr. Rezwan, an employee of Automach Supplies Sdn Bhd for the order. ➤ Prepare a purchase request and send it to Mrs. Maznida. ➤ Received purchase order from Mrs. Maznida and handed it to finance for payment. ➤ Arrival of the item needed and send it to Paka Branch.

<p>Week 16</p> <p>(6th June – 10th June)</p>	<ul style="list-style-type: none"> ➤ Assisted Miss Nurin in contacting BGM MS Screening for a quote on a criminal and background check. ➤ Completing Logbook
<p>Week 17</p> <p>(6th June – 10th June)</p>	<ul style="list-style-type: none"> ➤ Brief discussion with Mr. Fadzil about a workpack that I need to prepare. ➤ Communicating with Mr. Fathi and Mr. Mazlan who were the one that will do the job. ➤ Received the previous workpack from Mr. Saifullah. ➤ Prepared a job hazard analysis.
<p>Week 18</p> <p>(20th June – 24th June)</p>	<ul style="list-style-type: none"> ➤ Received the last task handed to me during industrial training. ➤ Studying about the task first ➤ Started doing the task and the deadline was before I ended my internship.
<p>Week 19</p> <p>(27th June – 1st July)</p>	<ul style="list-style-type: none"> ➤ Helped Mr. Saifullah amend the workpack for “HESS LDAR Programme” ➤ Purchased some items at Automach Supplies Sdn Bhd for the use of Choke Team in Paka. ➤ Prepared the purchase order and purchase request and send to finance for payment. ➤ Completing the Industrial Report and Logbook.
<p>Week 20</p>	<ul style="list-style-type: none"> ➤ Create a table of project costing for drones. ➤ Received a company profile and organisation chart for my report

(4 th July – 8 th July)	<ul style="list-style-type: none"> ➤ Continue working on task 1 ➤ Completing Industrial Report and Logbook
Week 21 (11 th July – 15 th July)	<ul style="list-style-type: none"> ➤ Started work from home due to personal reason. ➤ Continued working on task 1 at home ➤ Helped Mr. Mazlan to compile the satellite drawings and send it to him. ➤ Completing Industrial Report and Logbook.
Week 22 (18 th July – 22 nd July)	<ul style="list-style-type: none"> ➤ Find a quote for rental rate of equipments per day for a tender by PETRONAS Cari Gali Sdn Bhd. ➤ Working together with Mr. Syamim and Mr. Sopi ➤ Completing Logbook and Industrial Report ➤ Working on last task.
Week 23 (25 th July – 29 th July)	<ul style="list-style-type: none"> ➤ Completing slide presentation. ➤ Completing Industrial Report and Logbook ➤ Supervisor fill in the evaluation form.
Week 24 (1 st August – 5 th August)	<ul style="list-style-type: none"> ➤ Presentation week

Table 2: Weekly Activities

CHAPTER 4

DETAILS OF THE EXPERIENCE

4.1 INTRODUCTION

This chapter contains the details of my experience working at ReliaCraft Engineering Sdn Bhd. During my industrial training, a few tasks have been handed to me for me to complete within the time given. Each task will be explained broadly in this chapter.

4.2 Details of the experiences gained

TASK 1: Listing down the List of Training Certificate of the workers/staff.

There are some trainings that the staff needs to undergo to join and completing any job given to them. The trainings are TBOSIET, FFW, LPS, SSHE and A&D. Basically, I had to check all the lists provided and flag out any training that nearing the expiry date. The task was supposed to be done by Miss Nurin, as she is a new staff (HSE Assistant). However, Mrs. Hayati, an executive of HSE instructed Miss Nurin to share how to complete this task with me. Each training contains different years of validity, so we were looking for each date carefully to prevent any mistaken data collected. This task was given for me to complete in a week. Below is the example of the Excel given to me

Nationality	Email Add * Supervisor's email	Staff/Freelance/Subcon	Core SSE Training					Contract Compliance		CRAFT SPECIFIC TRAINING									
			TBOSIET Expiry (4 yrs) (DDMM/YY)	FFW Expiry (2 yrs) (DDMM/YY)	LPS Training Expiry (5 yrs) (DDMM/YY)	SSHE Induction Conducted Date (One Time) (DDMM/YY)	A&D Expiry (2 yrs)	Last A&D Test Date	Piggery & Singing Safety	Welding & Hot Work	Scaffold Safety	Survival Craft Operation Training	First Aid CPR						
			8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
MALAYSIA	noorhayati@reliacraft.com.my	STAFF	1-Jul-23	17-Jul-21	2-Jul-24	3-Jul-19	17-Jul-21	18-Jul-19											
MALAYSIA	noorhayati@reliacraft.com.my	STAFF	6-Mar-26	22-Jan-24	18-Sep-23	19-09-18	22-Jan-24	21-Jan-22											
MALAYSIA	noorhayati@reliacraft.com.my	STAFF	19-Sep-22	5-Sep-22	25-08-2023	26-09-2016	5-Sep-22	4-Sep-20											
MALAYSIA	noorhayati@reliacraft.com.my	STAFF	11-Jul-25	16-May-23	6-Mar-23	7-Mar-18	18-May-23	18-May-21											
MALAYSIA	noorhayati@reliacraft.com.my	STAFF	19-Nov-25	19-Feb-24	14-Sep-23	15-Sep-21	19-Feb-24	20-Feb-22											
MALAYSIA	noorhayati@reliacraft.com.my	STAFF	23-Jul-25	23-Mar-23	13-Oct-23	14-Oct-18	23-Mar-23	23-Mar-21											
MALAYSIA	noorhayati@reliacraft.com.my	STAFF	9-Oct-22	22-Apr-22	23-Mar-26	24-Mar-21	24-Mar-23	25-Mar-21											
MALAYSIA	noorhayati@reliacraft.com.my	STAFF	21-Jan-23	2-Mar-23	11-Feb-24	12-Feb-19	1-Mar-23	2-Mar-21											
MALAYSIA	noorhayati@reliacraft.com.my	STAFF	26-Nov-22	2-Nov-22	11-Dec-23	10-Dec-18	2-Nov-22	1-Nov-20											
MALAYSIA	noorhayati@reliacraft.com.my	STAFF	23-Mar-25	23-Mar-23	26-Oct-26	27-Oct-21	23-Mar-23	24-Mar-21											
MALAYSIA	noorhayati@reliacraft.com.my	STAFF	5-Feb-25	26-Jan-24	29-May-23	28-May-18	29-Jan-24	30-Jan-22											
MALAYSIA	noorhayati@reliacraft.com.my	STAFF	15-Jul-24	28-Nov-23	18-Dec-23	6-Dec-18	28-Nov-23	30-Nov-21											
MALAYSIA	noorhayati@reliacraft.com.my	STAFF	28-Sep-25	20-Feb-24	1-Mar-27	2-Mar-22	20-Feb-24	21-Feb-22											
MALAYSIA	noorhayati@reliacraft.com.my	STAFF	15-May-25	8-Feb-23	22-May-23	02-05-2013	8-Feb-23	24-Jan-19											
MALAYSIA	noorhayati@reliacraft.com.my	STAFF	12-Dec-22	4-Jun-22	6-Mar-27	29-Oct-2017	14-Jun-22												
MALAYSIA	noorhayati@reliacraft.com.my	STAFF	12-Dec-25	26-Sep-22	19-Oct-2024	22-01-2014	28-Sep-22	27-Sep-20											
MALAYSIA	noorhayati@reliacraft.com.my	STAFF	18-Dec-23	31-Dec-21	24-Jan-24	31-05-2017	24-Jan-24	24-Jan-22											
MALAYSIA	noorhayati@reliacraft.com.my	STAFF	25-Aug-23	14-Aug-21	23-Nov-22	24-Nov-18	14-Aug-21	15-Aug-19											

Figure 3: Excel of Training Certificate List

Here are some examples of how the certificate looks like:



Figure 4: Example of Certificate



Figure 5: Example of Certificate

After the list has been made and all the trainings that nearly expired has been flagged out, I emailed the Excel back to Mrs. Hayati for her to re-check before arranging a new training for them.

TASK 2: Learned about the process of DPI at EFD Induction Oil and Gas Sdn Bhd.

One of the services provided in ReliaCraft Engineering Sdn Bhd is Dye-Penetrant Testing (DPI). On 9th March 2022, I went to EFD Induction Oil and Gas Sdn Bhd in Shah Alam to watch Mr. Nikhil, ASNT NDT Level III to perform Dye- Penetrant there.

One of the earliest and most straightforward non-destructive inspection techniques is the dye penetrating test (DPT). The Dye Penetrant Test, sometimes called the Liquid Penetrant Test, is frequently used to identify surface discontinuities such as cracks, fractures, porosity, grinding defects, partial fusion, and joint faults. Finding flaws in materials including aluminium, cast iron, brass, steel and stainless steel, copper, magnesium, carbides, stellite, ceramics, and even some plastics is made easier with the help of this test or inspection method. Therefore, as compared to other non-destructive inspection techniques, the dye penetration test is highly economical and suited for both ferrous and non-ferrous materials.

The capillary action theory underlies the Dye Penetration Test. If a liquid can remain on a clean, dry surface for a predetermined period, known as the "Dwell Time," it can penetrate the surface. The test specimen or object must be covered with liquid penetrant by dipping, spraying, or brushing. After the dwell period has passed, the surplus must be removed. Sometimes, a developer is required. The developer's primary duty is to draw the penetrant out of the fault, creating an unseen indicator that the inspector can see. The dye penetration inspection is carried out under either white or ultraviolet light, depending on the kind of dye utilised.

The process of a dye penetration test can change depending on the penetrant system, component size, and discontinuity type. However, their general procedures will be comparable and can be explained as follows:

a) Pre-Cleaning and Surface Preparation

This is the most crucial and fundamental stage. The surface under examination has been cleared of all grease, oil, water, paint, and other impurities. The discontinuities must allow the penetrant unhindered passage. Solvents, alkaline cleaning processes, media blasting, and other cleaning techniques are all possible. To make the flaws visible, dry, and uncontaminated, the sample may occasionally even need to be etched.

c) Excess Penetrant Removal

The sample surface needs to be cleared of extra penetrant. The removal technique is chosen from water-washable, solvent-removable, lipophilic post-emulsifiable, hydrophilic post-emulsifiable, etc. depending on the type of dye penetrant. The maximum sensitivity level requires the use of emulsifiers, which chemically react with the oily penetrant and make it simpler to remove with water spray. If the extra penetrant isn't completely removed, the developer may apply and leave a background in the developed region that can conceal symptoms of or flaws. Additionally, caution must be used while using solvent remover and a lint-free cloth to avoid directly spraying the solvent on the test surface, which could remove the penetrant from the defects.

d) Developer Application

After removing extra penetrant, a thin layer of white developer is applied. Developers come in a variety of forms, including a non-aqueous wet developer, dry powder, water suspendable developer, and water-soluble developer. The developer is chosen based on the penetrant's compatibility. For faults to be seen, the developer essentially pulls dye penetrant out from the defects and brings it to the surface. We call this procedure bleeding out. Developers are sprayed, dipped, or dusted on.



Figure 8: Mud Drum

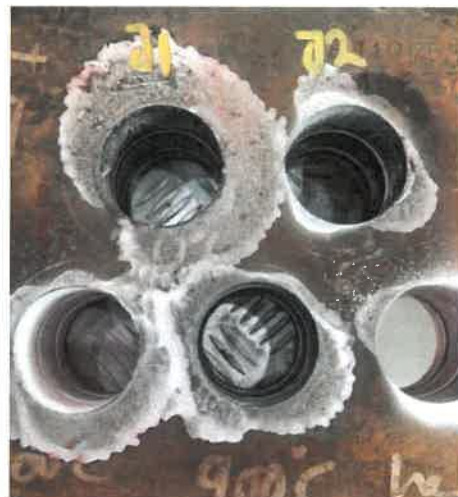


Figure 9: Steam Drum

The developer is left on the test surface long enough for the trapped penetrant to be extracted and released for visual indication. Typically, 10 minutes minimum development time is required. The bleed-out clearly identifies the specimen's flaw's position, kind, and direction.

The next step is performing an inspection with sufficient lighting. For visible dye penetrant tests, visible light is used, and fluorescent penetrant examinations require sufficient ultraviolet (UV-A) radiation. The inspector must have sufficient experience to comprehend the correct characteristics of the problems. After inspection and the documentation of any flaws, the surface needs to be properly cleaned. The developer that was used is taken out.

The client was Mr. Azim from RNWA Engineering Sdn Bhd. He then asked me to provide a timesheet and a report for the testing results. The previous report was provided by Mr. Nikhil and I was told to prepare a new one for this job.

WORK ACTIVITY	DATE																															TOTAL HOURS	CHARGE CODE / REMARKS			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31					
REPLICA AND HARDNESS TESTING								8	8																									16		
																																		0		
																																		0		
																																		0		
																																		0		
																																		0		
OVERTIME : Normal																																		0		
OVERTIME : Public holiday																																			0	
																																			0	
Total Working Hours / Day	0	0	0	0	0	0	0	0	2	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16		
LEGEND : ORIGINAL COPY : Office Used YELLOW COPY : Personnel Used BLUE COPY : Client Used M : Mobilization D : Demobilization	PREPARED BY : SIGNATURE OF PERSONNEL NAME : MUHAMMAD SYUKRI BIN JUMARI DATE : 10/3/2022																															APPROVED BY : CLIENT REPRESENTATIVE NAME : DATE :		CLIENT STAMP		

Figure 10: Monthly Personnel Timesheet


 RELIACRAFT		RELIACRAFT ENGINEERING SDN BHD (782932- M) NO 2, JALAN PERINDUSTRIAN SUNTRACK, OFF JALAN PIA,SEKSYEN 13, BANDAR BARU BANGI, 43000 KAJANG, SELANGOR		RCESB-OPE-010/Issue : 1/Rev. No: 1
		LIQUID PENETRANT INSPECTION REPORT		
CLIENT : PCMTBE	REPORT NO : RCE/PCMTBE/DPI/2022-002			
PROJECT : DYE-PENETRANT INSPECTION ON MUD DRUM	PAGE : 2 OF 2			
ITEM : MUD DRUM	DATE :09/03/2022			
PURPOSE : TO FIND INDICATION ON SURFACE	PROCEDURE NO : RCE/PT/002 REV2			
MATERIAL : SA516 Gr. 70N	SIZE : - N/A	ACC. / REJ. : ASME V ARTICLE 6 DPI		
SURFACE COND : AS CLEANED	JOINT TYPE : N/A	WELDING PROCESS : N/A		
LIQUID PENETRANT INSPECTION				
PRE CLEANING : YES	DRYING TIME : N/A	EQUIPMENT :		
PENETRANT : SHERWIN	PENETRATION TIME : 7 - 15 MINUTES	AC / DC / PERMANENT MAGNET :		
RED DYE / FLOURESCENT : SHERWIN		CURRENT / AMPERAGE :		
REMOVER : SHERWIN	SOLVENT/WATER : SOLVENT	POLES SPACING :		
REMOVING METHOD : WIPE	DRYING TIME : N/A	MAGNETIC INK :		
DEVELOPER : SHERWIN	DRY / WET : WET	COLOUR / FLUORESCENT :		
DEVELOPING TIME : 30 SECONDS		CONTRAST PAINT :		
LIGHTING : NATURAL		LIGHTING :		
NO	PART / WELD IDENTIFICATION	RESULT		
	DPI ON TUBE HOLE AFTER TUBE REMOVAL (MUD DRUM)	*No relevant indication was detected during inspection time *Acceptable as per code specification *Refer attachment for more detail		
1	J1			
2	J2			
3	J3			

Figure 11: Report for Mud Drum


 RELIACRAFT		RELIACRAFT ENGINEERING SDN BHD (782932- M) NO 2, JALAN PERINDUSTRIAN SUNTRACK, OFF JALAN PIA, SEKSYEN 13, BANDAR BARU BANGI, 43000 KAJANG, SELANGOR		RCESB-OPE-010/Issue : 1/Rev. No: 1
		LIQUID PENETRANT INSPECTION REPORT		
CLIENT : PCMTBE	REPORT NO : RCE/PCMTBE/DPI/2022-001			
PROJECT : DYE-PENETRANT INSPECTION ON STEAM DRUM	PAGE : 1 OF 2			
ITEM : STEAM DRUM	DATE :09/03/2022			
PURPOSE : TO FIND INDICATION ON SURFACE	PROCEDURE NO : RCE/PT/001 REV2			
MATERIAL : SA516 Gr. 70N	SIZE : - N/A	ACC. / REJ. : ASME V ARTICLE 6 DPI		
SURFACE COND : AS CLEANED	JOINT TYPE : N/A	WELDING PROCESS : N/A		
LIQUID PENETRANT INSPECTION				
PRE CLEANING : YES	DRYING TIME : N/A	EQUIPMENT :		
PENETRANT : SHERWIN	PENETRATION TIME : 7 - 15 MINUTES	AC / DC / PERMANENT MAGNET :		
RED DYE / FLOURESCENT : SHERWIN		CURRENT / AMPERAGE :		
REMOVER : SHERWIN	SOLVENT/WATER : SOLVENT	POLES SPACING :		
REMOVING METHOD : WIPE	DRYING TIME : N/A	MAGNETIC INK :		
DEVELOPER : SHERWIN	DRY / WET : WET	COLOUR / FLUORESCENT :		
DEVELOPING TIME : 30 SECONDS		CONTRAST PAINT :		
LIGHTING : NATURAL		LIGHTING :		
NO	PART / WELD IDENTIFICATION	RESULT		
	DPI ON TUBE HOLE AFTER TUBE REMOVAL (STEAM DRUM)	*No relevant indication was detected during inspection time *Acceptable as per code specification *Refer attachment for more detail		
1	J1			
2	J2			

Figure 12: Report for Steam Drum

TASK 3: Attended Oil and Gas Safety Passport Training at NIOSH

On Monday, 7th March 2022, I attended Oil and Gas Safety Passport Course at NIOSH, Bangi. The training started on 9:00 am and ended at 4:00 pm. This course contains the introduction of the training, Law of Occupation Safety and Health, causes and prevention of accidents and lastly, general hazards, activities in oil and gas industry and control measures. I get to learn a lot during the training. The agencies related with occupation safety and health (OSHA) and the insurance for those who injured or dead.

The purpose of joining this course is to receive the OGSP Card that allows me to enter any site within 3 years. The course fee is RM265.00 and it was fully sponsored by ReliaCraft Engineering Sdn Bhd. Whoever joined this course can have the CIDB Green Card as well.



Figure 13: OGSP Card



Figure 14: CIDB Card

TASK 4: Create an illustration for Opgal Gas Detection Camera Tripod

My supervisor, Mr. Fadzil requested me to create an illustration for Opgal Gas Detection Camera Tripod to use in a project “Infrared Thermography Gas Detection Inside Cargo Oil Tank 3 Centre. Malaysia Deepwater Production Contractors (MDPC) has got ongoing problem with its Cargo Oil Tank 3 Centre (3C Tank) at FPSO Kikeh for several weeks. Due to the high LEL level, any activity inside 3C Tank is not permitted. This ongoing LEL level problem has become a showstopper, whereby the tank cleaning and inspection activity has been put on hold. This 3C Tank is required to be approved by ABS Principal Surveyor, for it to be allowed to be utilized.

MDPC suspected the problem is caused by some leakage at its transverse bulkhead frame 87. This transverse bulkhead is basically an inner wall within the hull of a ship, used to separate it into smaller compartments. For this case, this transverse bulkhead is used to separate between 3C Tank from 2C Tank. MDPC suspected that this transverse bulkhead frame 37 has leakage whereby the crude fluid from 2C Tank is sipping through its wall. However, they are not able to prove it since the coverage area is quite big for visual inspection. Refer to illustration below for visualization:

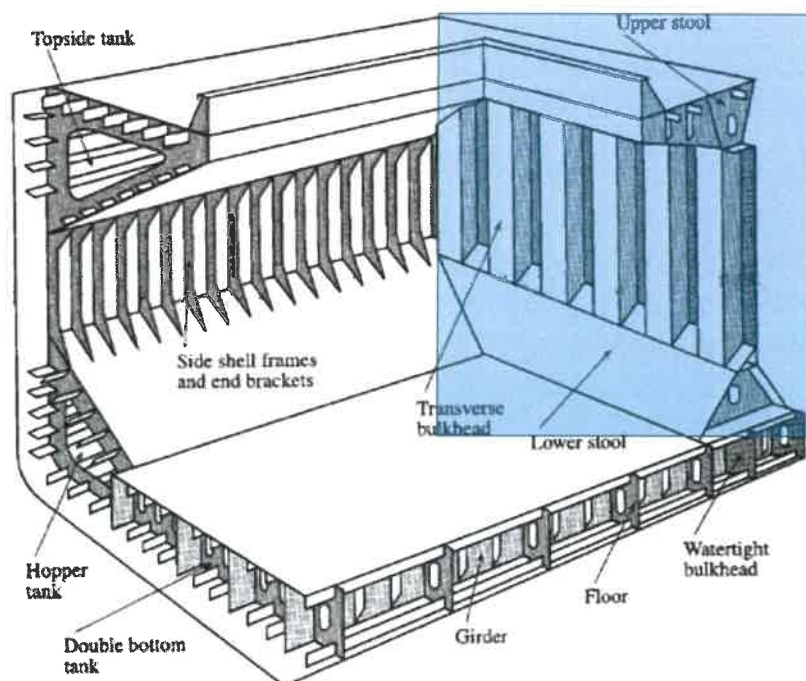


Figure 15: Illustration inside the tank

The highlighted part is the transverse bulkhead. The estimated dimension of this section is 18-meter width and 27-meter height. MDPC proposed to insert the camera via a jig or pole via several Butterworth Holes from the main deck. This recommendation is because manpower is not allowed to enter the tank. Via this conventional remote operation, they expect the recording to be done and they will be able to identify the leak location from the recording. But this relates to the effective distance of the camera to be able to serve its purpose via this methodology.

So, Mr. Fadzil asked me to have few drafts send to him for approval. These are the drafts made by me and Miss Nurin:

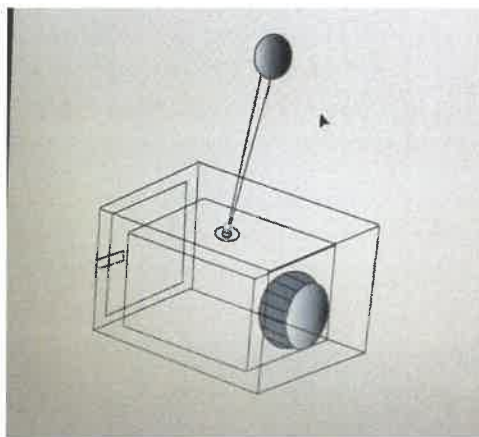


Figure 16: Draft 1

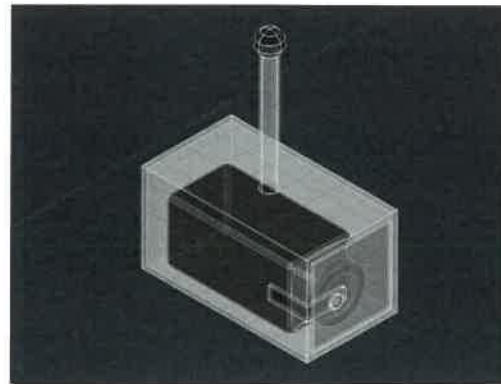


Figure 17: Draft 2

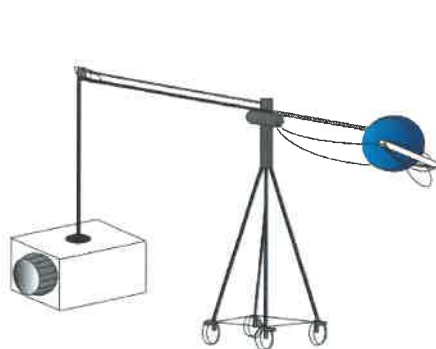


Figure 18: Draft 3

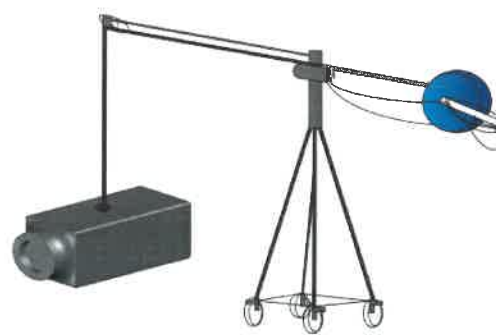


Figure 19: Draft 4

After a few try and error, Mr. Fadzil finally approved one of my drafts to be added into the slide proposal. The slide proposal was prepared by Mr. Nu'man, a service engineer. I managed to use my basic drawing knowledge that I learned during my studies.

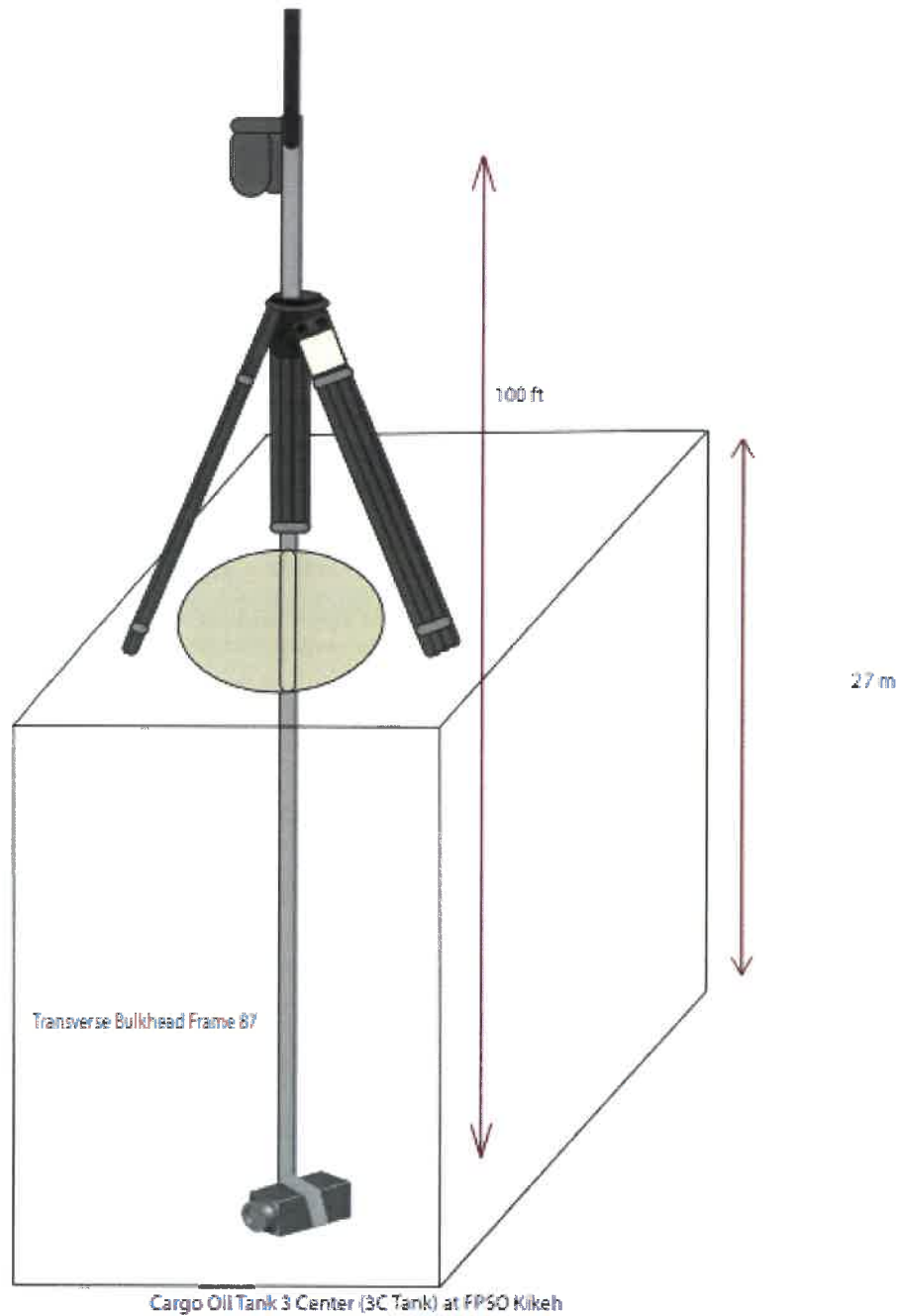


Figure 20: Final drawing / illustration

TASK 5: Finding the quotation for items and equipments needed in a tender.

During my internship, ReliaCraft Engineering Sdn Bhd have been participate for few times in tender exercise. For example, tender exercise by Malaysia Marine and Heavy Engineering (MMHE). In this tender, we are required to find the quotation or price for flexible hose and couplings.

Size Requirements and Process Data											
Tag No.	Quantity	Size	End Connection	Pressure Class Rating	Piping Class	Line Design Pressure	Line Design Temperature	Service	Colour of Sleeve	Line No.	PEFS / UEFS No.
SHC-6712	1	DN80	Side A: Dry Break Female Coupler o/v dust plug Side B: DN80 Flanged RF ASME B16.5 CL150	CL150	11432X	15.0 barg	-29/150 Deg C	Desert Bunkering	TBA	80-F3-67002-11432X	STD.PX.1010
SHC-6326	1	DN50	Side A: Dry Break Female Coupler o/v dust plug Side B: DN50 Flanged RF ASME B16.5 CL150	CL150	13451X	14.8 barg	-29/150 Deg C	Condensate Draining	TBA	50-DC-63007-13451X	STD.PX.1013
SHC-6327	1	DN50	Side A: Dry Break Female Coupler o/v dust plug Side B: DN50 Flanged RF ASME B16.5 CL150	CL150	11043X	14.8 barg	-29/150 Deg C	Condensate Draining	TBA	80-DC-63010-11043X	STD.PX.1013
SHC-6000	1	DN50	Side A: Camlock Male Adaptor o/v dust plug Side B: DN50 Flanged RF ASME B16.5 CL150	CL150	13418X	14.8 barg	-29/150 Deg C	MEG Skid Inlet	TBA	TBA	TBA
SHC-6870	1	DN50	Side A: Camlock Female Adaptor o/v dust plug Side B: DN50 Flanged RF ASME B16.5 CL150	CL150	13418X	14.8 barg	-29/150 Deg C	CI Tote Tank	TBA	50-CI-68001-13418X	STD.PX.1011
SHC-6910	1	DN50	Side A: Camlock Female Adaptor o/v dust plug Side B: DN50 Flanged RF ASME B16.5 CL150	CL150	13419X	14.8 barg	-29/150 Deg C	K91 Tote Tank	TBA	TBA	STD.PX.1024
SHC-5111	1	DN50	Side A: Camlock Female Adaptor o/v dust plug Side B: DN50 Flanged RF ASME B16.5 CL150	CL150	13411X	14.8 barg	-29/150 Deg C	Service Water Bunkering	TBA	50-W5-51001-13411X	STD.PX.1012
SHC-5112	1	DN25	Side A: Camlock Female Coupler o/v dust plug Side B: DN25 Flanged RF ASME B16.5 CL150	CL150	13411X	14.8 barg	-29/150 Deg C	Service Water	TBA	25-W5-51004-13411X	STD.PX.1012
SHC-5113	1	DN25	Side A: Camlock Female Coupler o/v dust plug Side B: DN25 Flanged RF ASME B16.5 CL150	CL150	13411X	14.8 barg	-29/150 Deg C	Service Water	TBA	25-W5-51005-13411X	STD.PX.1012
SHC-5114	1	DN25	Side A: Camlock Female Coupler o/v dust plug Side B: DN25 Flanged RF ASME B16.5 CL150	CL150	13411X	14.8 barg	-29/150 Deg C	Service Water	TBA	25-W5-51009-13411X	STD.PX.1012
SHC-6410	1	DN80	Side A: Camlock Female Adaptor o/v dust plug Side B: DN80 Flanged RF ASME B16.5 CL150	CL150	11043X	14.8 barg	-29/150 Deg C	Open Drain	TBA	80-VT-T8410-11043X	STD.PX.1014
Revision History			Description			Prepared by:	Reviewed by:	Approved by:	Date		

Figure 22: List of items needed in MMHE tender

Above is the list of items in the tender that requires us to quote. So, I have been contacting the suppliers on Internet to find the price for each item. The time given to find the price was two weeks. So, I have spent the whole two weeks reaching out suppliers for the quote.

Another tender exercise by Tenaga Nasional Berhad (TNB) for GT1A Major Overhaul at SJTT Port Dickson. The items needed in the tender are listed below:

NO	ITEM / DETAILS OF SPECIFICATIONS / MARKING	BRAND	QUANTITY	UNIT	PRICE PER UNIT	TOTAL
112	Compressed Oxygen (10.7m3) rental 2 months Complete with regulator, flexible hose (min 25m) Gas cylinder must be provided with cart/trolley with chain to secure the cylinders		8	Set		
113	Compressed Acetylene (6.3m3) rental 2 months Complete with regulator, flexible hose (min 25m) Gas cylinder must be provided with cart/trolley with chain to secure the cylinders		4	Set		
114	Compressed Argon (10.7m3) rental 2 months Complete with regulator, flexible hose (min 25m) Gas cylinder must be provided with cart/trolley with chain to secure the cylinders		3	Set		
TOTAL (RM)						

Figure 23: List of items needed in TNB tender

Next, ReliaCraft Engineering Sdn Bhd also participated in a tender exercise by Petronas Cari Gali Sdn Bhd where I need to find the price for rental of equipment per day. I have been working together with Mr. Syamim, finding the rental rate per day. However, the items needed were quite complicated and rarely be found in Malaysia. So, we even reach out for suppliers from oversea such as Singapore, India, China and United States.

Schedule 5 - Rental of Equipment

No.	Description	UOM	Unit Rate (RM)
1	CSI KP2600	per day	
2	CSI 4500 machinery Plotting Tools	per day	
3	CSI 2130 Machinery Health Analyser with Advance Balancing Pack, ODS/Modal Analysis Pack, Laser Alignment Pack	per day	
4	CSI 2140 Machinery Health Analyser with Advance Balancing Pack, ODS/Modal Analysis Pack, Laser Alignment Pack	per day	
5	Ultrasonic Analyser (to include spec)	per day	
6	Portable Shaker	per day	
7	TR3	per day	
8	Portable Lube Oil Particle Counter	per day	
9	Portable Lube Oil Fluid Scanner	per day	
10	Portable Lube Oil Viscometer	per day	
11	Portable Gas Detector	per day	
12	Lube Oil Filtration Cart	per day	
13	Lube Oil Purifier	per day	
14	Lube Oil PDPS Flushing Skid	per day	
15	MPS Test Kit	per day	
16	Escape Set (Breathing Apparatus)	per day	
17	Vibrosight Multichannel Analyser	per day	
18	Vibrosight Vision Integrated Software	per day	
19	ADRE Multichannel Analyser	per day	
20	MIDAS Meter (equipment only)	per day	
21	MIDAS Meter (equipment and Operator)	per day	
22	Motion Amplification Camera	per day	
23	FLIR GF320 Camera	per day	
24	FLIR P640 Camera	per day	
25	FLIR GF77 Camera	per day	
26	FLIR E85 Camera	per day	
27	Noise/Sound Level meter	per day	
	TAXES (Note 1)		
	Service Tax (Note 2)		

Figure 24: List of items needed in PETRONAS Cari Gali Sdn Bhd tender

These are the list of equipments that I must know the price rental per day. This task had been on going for 2 weeks starting 13th July 2022 and we need to find all the price before 22nd July 2022. Mr. Syamim has been helping me a lot during this time. He helped me on how to reach out the suppliers, teach me on how to reply the email properly and so on. I would like to thank him for his help.

TASK 6: Extract the valves in a drawing into an Excel

My last task was to extract each equipments in a drawing and put it into an Excel. There was a job required two of our workers, Mr. Fathi and Mr. Mazlan to went offshore and completed the job. They need to do the job at 7 different locations which are WHA, WHB, WHC, WHD, Kesumba, Anggerik, and Zetung.

Mr. Saifullah had provided me the example for WHA and WHC equipment extraction in an Excel, so I just followed the example and do it for another 5 locations. The client was HESS Corporation.

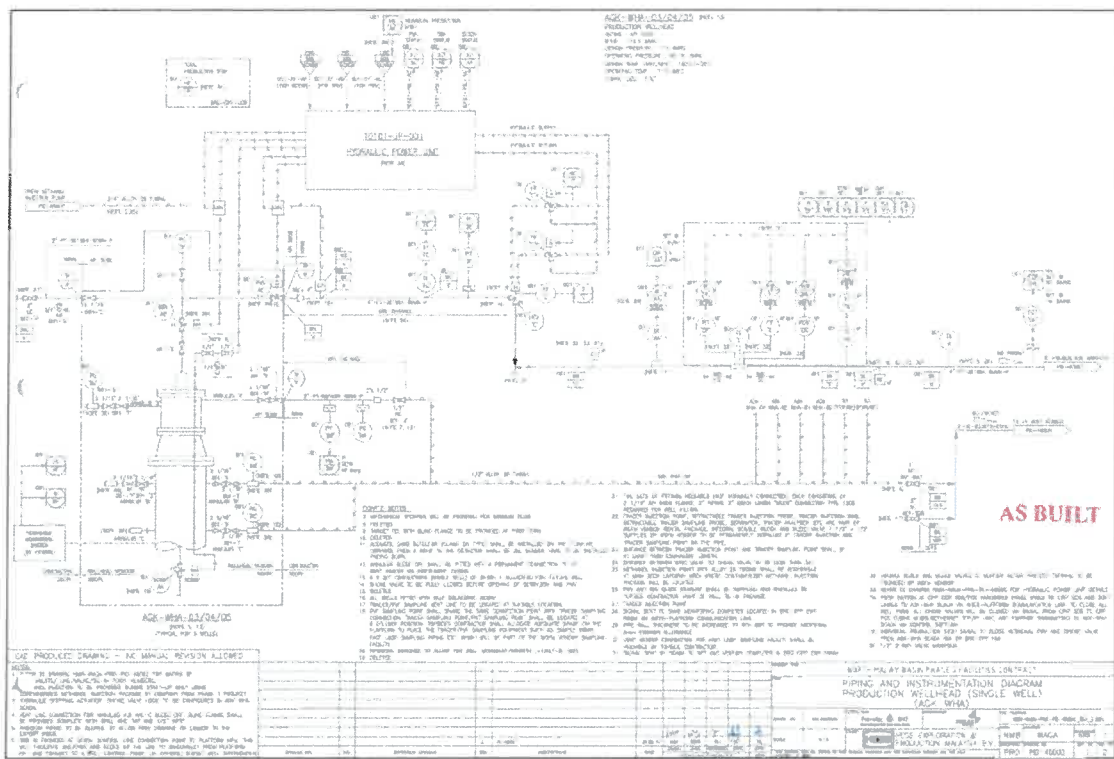


Figure 25: Example of Drawing provided for Anggerik

STATION					COMPONENT DESCRIPTION									
No.	Date of Inspection	Plant / Division	Location	Area	System	Sub-System	System & Sub System status (See note 1)	P&ID Number BRG-CPP-PRD	Equipment details	Equipment Tags (see note 2)	Leakage (Y/N)	PPM reading	LEL Reading %	Leak rate (g/hr)
1	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Pressure safety valve	001-PSV-AD	N			
2	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Pressure safety valve	001-PSV-AC	N			
3	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Pressure safety valve	001-PSV-AO	N			
4	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	084-AA	N			
5	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	084-I	N			
6	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	084-K	N			
7	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	084-H	N			
8	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	084-I	N			
9	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	084-L	N			
10	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	084-O	N			
11	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	084-P	N			
12	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	084-M	N			
13	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	084-N	N			
14	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	084-F	N			
15	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	084-U	N			
16	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	084-V	N			
17	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	084-S	N			
18	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	084-T	N			
19	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	084-V	N			
20	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	084-W	N			
21	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	084-X	N			
22	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	084-Y	N			
23	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	084-Z	N			
24	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	001-AC	N			
25	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	001-AH	N			
26	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	001-AG	N			
27	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	001-AD	N			
28	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	001-AH	N			
29	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	001-AG	N			
30	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	001-AD	N			
31	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	001-AE	N			
32	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	001-C	N			
33	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	001-B	N			
34	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	001-F	N			
35	10/7/2021	BRG	CPP - WHA	Welltop			Online	PIC-001-2501	Ball valve	001-F	N			
36	10/7/2021	PRD	CPP - WHA	Welltop	D.P. WELL	WHA-S02 / S03 / S04 / S06 / S07 / S08 / S09 / S11 / S12	Online	PIC-001-2501	Ball valve	001-F	N			

Figure 26: Example of excel that I used to key in the data

Above is an Excel that I used to key in the data for P&ID Number, Equipment details and equipment tag. Since the drawings were so complicated, I had to print all the them and looked carefully to prevent any mistake during the key in process. Since I have been working from home, I spend my last month of internship doing this and that would be my last task in ReliaCraft Engineering Sdn Bhd.

Among all the tasks given to me, I would say that I have gaining a lot of knowledge doing task 2, 4 and 6. These 3 tasks really helped me use all the things I learned at UiTM and applying it while doing these tasks.

4.3 PROBLEM ENCOUNTERED AND APPROACH FOR SOLVING PROBLEMS

i. Communication skills

The capacity to communicate effectively is one of the most critical abilities required of engineers, since it enables us to exchange information with others and comprehend what we are told. Interactions can be made easier with good communication skills, which allow pupils to talk clearly and gently. During my internship, I strengthened my communication skills. I struggled to speak with others before because of a lack of confidence and because I am a shy person, but this Industrial Training has taught me how to connect successfully with others. At this point, I realised that effective communication is critical to success since if I remained mute throughout my internship, I would not be able to learn the knowledge I needed.

ii. Teamwork

Friendship and loyalty are fostered in the team environment. As I am the youngest and the only intern student at ReliaCraft, I had trouble asking for the staffs help. Employees are motivated by this strong relationship, which allows them to work harder, collaborate, and support one another. People have a wide range of abilities, flaws, skills, strengths, and habits. If you don't build a collaborative environment, you'll have a lot of trouble meeting your objectives. During my industrial training, I was given the opportunity to do various tasks that required the assistance of other practicum participants. I also learned that to perform an amazing task, age between the staffs should not be a problem at all. Ideas, advice, and reprimands are all beneficial to the work's success. As a result, it is critical to have a strong team spirit to fulfil the key goals.

iii. Time management

Since it promotes concentration, creates trust, and allows students to arrange time more successfully, time management is vital for prioritising and enhancing job efficiency. As I was only depending on my friend's car, sometimes I came late to work. Good time management can help with work-life balance, stress reduction, and achieving goals faster and easier. Then, when someone isn't hurrying to finish it before a deadline, the quality of the work improves. Then, I changed my timetable and arrived earlier than before. Good time management can assist someone in prioritising their to-do list and

allocating the necessary time for key tasks, so they know exactly what they need to do and how much time they must do everything.

4.4 PROFESSIONAL AND ETHICAL ISSUES

Undergoing industrial training at ReliaCraft Engineering Sdn Bhd is an experience that I will never forget because there are many things to learn. The reason I applied to undergo industrial training here is because this organization is well known as this organization has been developing for a long time. Apart from that also, the scope of work in the organization involves the scope of chemical engineering.

Engineers here always try their best to ensure that practical students who undergo industrial training here get adequate knowledge and experience in line with what they learn while at university.

4.5 HEALTH AND ENVIRONMENTAL ISSUES

To succeed and be viable over the long term, ReliaCraft Engineering applied sustainable organisations work to reach a triple bottom line of profit, planet, and people. This means that without safeguarding the welfare, health, and safety of their most important resource—employees—organizations cannot be sustained. Sustainability considers both what is done and how it is accomplished. It's a way of thinking that calls for leadership, not settling for second best in any area of operations and defining and attaining objectives above and above legal requirements.

Operating at the highest standard in terms of health, safety, and the environment should be the goal of ReliaCraft Engineering. ReliaCraft ensured that the interests of our employees, clients, and the public are met with high standards as far as it is practically possible to do so. Following that, ReliaCraft Engineering Sdn Bhd would instruct, motivate, and train its workforce to work safely, stay healthy, and exercise environmental responsibility. The company also establishes objectives for its performance in the areas of health, safety, and the environment and takes the necessary measures to ensure further improvement.

CHAPTER 5

CONCLUSION

5.1 CONCLUSION

During my Industrial Training, I have gained a lot of useful experience in the actual operation of chemical engineering. With the experience, I am ready to position my future as an efficient professional engineer in the future. In working environment, employers are looking for chemical engineers with strong knowledge and good design intuition in their field. Time planning, manpower and resources are the example that chemical engineers can understand the project in depth and details.

Engineers work with clients throughout their working lives. This requires strong communication, listening, and most importantly, negotiation skills to manage client relationships and work effectively. The engineers need to face almost difficult situations every day. Adaptability and strong interpersonal skills are important and engineering students must cultivate to cope with the working environment.

5.2 RECOMMENDATION

I propose that the company construct a more organized training program by categorizing and organizing the many types of learning tasks that students can do. Students' perceptions, knowledge, skills, and experience of prospective jobs should also be cultivated through training programmes that optimize study time. The training program will run smoothly and successfully, resulting in high-quality new graduates.

Then, I hope that engineers can put their trust to students by giving them task to less a burden work that they need to do. Mistakes that students do, engineers can give some advice and show them how to do the works. This is one of the learning where students can practice what they learn and utilize the knowledge gained from this industrial training for their future careers.

REFERENCE

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APPENDIX



EFD INDUCTION SDN BHD



“Jamuan Hari Raya”