

BSBWHS508

Manage WHS hazards associated with plant



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ASSESSMENT FOR BSBWHS508

Student name	NYAIM THU AUNG
Date of assessment submission	7/06/2017

Trainer/Assessor's name	
Date of assessment marking	Click here to enter a date.
Outcome for unit	☐ Competent ☐ Not Yet Competent

TASK INSTRUCTIONS

- The assessment for this unit of competency consists of the following:
 - A series of activities:** Some of these activities will require you to provide a response within this document, others will require you to gather evidence to demonstrate your knowledge and skills (overview below)
 - Quiz:** You will be required to complete a series of questions to demonstrate your knowledge and skills.
 - Practical task:** You will be required to have an observer attest to your knowledge and skills and sign a report to this effect.
- At times, you will be provided with a specific business context to which you must respond, otherwise it is anticipated that you will use a workplace of your choosing (your own, or hypothetical) to provide the context to the task.
- At all times, the responses in your assessment must reference **Australian** (Queensland or Federal) documentation, including legislation, regulations, codes of practice, standards and guidance publications.

ACTIVITY OVERVIEW		REQUIRED FOR SUBMISSION
1.	Legislative obligations regarding plant	Workbook response (below)
2.	Identifying/assessing plant hazards and risks	a) Workbook response (below)
3.	Implementation and evaluation of risk controls	b) Workbook response (below)
4.	Registration, licensing and certification	c) Workbook response (below)

ACTIVITIES

For the following activities, name a workplace that you wish to examine.

Name of workplace	AsiaFlex Manufacturing Plant
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1.

Explain their duties, rights and obligations of PCBU's (and their officers) and workers regarding operation and maintenance of plant (including hazard management) as found in:

1. *Work Health and Safety Act 2011* (Qld)
2. *Work Health and Safety Regulations 2011* (Qld)
3. A code of practice relevant to your chosen workplace
4. An example of guidance material from the regulator (e.g. plant hazard checklists)
5. Organisational policies
6. Organisational procedures
7. Organisational processes
8. Organisational systems

1. <i>Work Health and Safety Act 2011</i> (Qld)	According to Part 2, Division 2: Primary duty of care, Section 19: (1) A person conducting a business or undertaking must ensure, so far as is reasonably practicable, the health and safety of: (a) workers engaged, or caused to be engaged by the person; and (b) workers whose activities in carrying out work are influenced or directed by the person; while the workers are at work in the business or undertaking. (2) A person conducting a business or undertaking must ensure, so far as is reasonably practicable, that the health and safety of other persons is not put at risk from work carried out as part of the conduct of the business or undertaking (3) Without limiting subsections (1) and (2), a person conducting a business or undertaking must ensure, so far as is reasonably practicable: (a) the provision and maintenance of a work environment without risks to health and safety; and (b) the provision and maintenance of safe plant and structures; and (c) the provision and maintenance of safe systems of work; and (d) the safe use, handling and storage of plant, structures and substances; and (e) the provision of adequate facilities for the welfare at work of workers in carrying out work for the business or undertaking, including ensuring access to those facilities; and (f) the provision of any information, training, instruction or supervision that is necessary to protect all persons from risks to their health and safety arising from work carried out as part of the conduct of the business or undertaking; and (g) that the health of workers and the conditions at the workplace are monitored for the purpose of preventing illness or injury of workers arising from the conduct of the business or undertaking.
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	(4) If: (a) a worker occupies accommodation that is owned by or under the management or control of the person conducting the business or undertaking; and (b) the occupancy is necessary for the purposes of the worker's engagement because other accommodation is not reasonably available; the person conducting the business or undertaking must, so far as is reasonably practicable, maintain the premises so that the worker occupying the premises is not exposed to risks to health and safety. (5) A self-employed person must ensure, so far as is reasonably practicable, his or her own health and safety while at work.
2. Work Health and Safety Regulations 2011 (Qld)	According to Part 2 division 3 of Workplace health and safety regulation 2011, PCBU's in Australia and accountable the duty as basically stated below: (a) the provision and maintenance of plant and systems of work that are, so far as is practicable, safe and without risks to health (b) the making of arrangements for ensuring, so far as is practicable, safety and absence of risks to health in connection with the use or operation, handling, storage and transport of plant and substances; (c) the provision of such information, instruction training and supervision as is necessary to ensure, so far as is practicable, the safety and health at work of his employees; (d) so far as is practicable, as regards any place of work under the control of the employer or self-employed person, the maintenance of it in a condition that is safe and without risks to health and the provision and maintenance of the means of access to and egress from it that are safe and without such risks; (e) the provision and maintenance of a working environment for his employees that is, so far as is practicable, safe, without risks to health, and adequate as regards facilities for their Welfare at work.
3. Code of practice	According to the managing risk of plant in the workplace code of practice 2013, it is stated that A person with management or control of plant at a workplace must manage risks to health and safety associated with the plant. In order to manage risk under the WHS Regulations, a duty holder must: - identify reasonably foreseeable hazards that could give rise to the risk - eliminate the risk so far as is reasonably practicable - if it is not reasonably practicable to eliminate the risk, minimise the risk so far as is reasonably practicable by implementing control measures in accordance with the hierarchy of control - maintain the implemented control measure so that it remains effective, and - review, and if necessary revise, risk control measures so as to maintain, so far as is reasonably practicable, a work environment that is without risks to health and safety.

4. Guidance material	According to the importing and supplying safe plant of guidance material, Importers and suppliers have a duty to ensure, so far as is reasonably practicable, the plant is imported or supplied without risks to the health and safety of people who: - assemble the plant - use the plant - store the plant - decommission, dismantle or dispose the plant, or - are exposed to the plant in a workplace or affected by its use. Importers and suppliers must, so far as is reasonably practicable, eliminate or minimise risks to health and safety regarding the plant being supplied, where the manufacturer has not already done so. This may be necessary where the importer has no direct connection to an overseas designer or manufacturer. To help importers and suppliers comply with their obligations they should confirm they are being provided with safe plant. Any imported plant must be inspected having regard to information provided by the manufacturer. If this information requires the plant to be tested, then the importer must undertake this testing.
5. Organisational policies	TechnipFMC HSES policy stated the commitment of top management and objectives of overall operation including but not limited to the following: > Continuously eliminating or reducing risk of injury related to our activities through design, process improvement and technologies. > Complying with all legislative requirements, laws and regulations. When we deem necessary we will exceed those requirements to meet our internal values. Then, display the policy in banner, email to all workers, and include in the HSES induction for all new comers, contractor and client as well as display at all offices.
6. Organisational procedures	TechnipFMC APAC has 39 HSE related procedures to ensure the operation is running safely. One of the procedures is confined space entry procedure. This procedure is highlighted the plant operation manager shall stop the job for safety if unsafe act and condition is observed. He is also responsible to participate HSE program such as HSE committee Meeting, HSE weekly meeting, and HSE campaign. In addition, He is accountable to ensure the operation engineer is following the HSE rules in the plant, and he must be led by example. He is also required to join the weekly walkabout for HSE and lead the HSE audit.
7. Organisational processes	In the HSE for confined space entry processes, it is stated the responsibility of operation engineer to ensure the risk is identified before the job is carry out. PTW is applied before entering the confined space. Identify and notify HSE for anyone who wanted to work in the confined space to ensure there are trained before entering to the confined space.
8. Organisational systems	In the HSE for confined space entry system, it is stated the flows of entering confined space for any works. For example, PTW need to be applied, workers who worked for the job need to be identified and trained including standby person, equipment, tool and gas hoses shall be inspected and no leaks, emergency drill need to be carried out, gas check muse be conducted before entering to the

	confined space by competent gas tester and close the permits once the job is finished and debriefing to be conducted to identify lesson learnt for sharing.
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Outcome for Activity 1	☐ Satisfactory ☐ Not satisfactory
Trainer/Assessor comments	

2.

Identify two (2) plant-related hazards (one relating to pressurised fluid, one relating to moving machinery parts) that may occur in your workplace. For each hazard identified, find information to explain:

1. The nature and scope of the hazard, including the incidents/injuries it can cause
2. Determine the level of risk for the hazard within your workplace
3. Name and justify at least two (2) risk controls that may be implemented to address the hazard and risk assessment results
 - d) Explain which of these risk control options would be the most suitable, following the hierarchy of control
4. Who you would consult as part of hazard identification/risk assessment

Name hazard relating to pressurised fluid

Pressure hazard from Hydrotesting of a flexible pipe line (during Factory Acceptance Test aka FAT.)

Nature and scope of hazard

Hydrostatic test is conducted to ensure its integrity especially during FAT. Hydrostatic testing may also be conducted during the service life of the pipeline to evaluate its operational integrity. The hydrostatic test consists of pumping water into the pipeline, "pressuring up" the line to specified test pressures, and holding that pressure for a discrete period of time in accordance with applicable regulations and guidelines, including regulations promulgated by OPS. After completion of the hydrostatic test, the pressure is relieved and the water is removed from the pipeline (de-watering).

Source of information (e.g. website address):

<https://www.osha.gov/dts/shib/shib062104.html>

Determine the level of risk

Matrix	A: Death or permanent disability	B: Serious injury	C: Lost time injury	D: Casualty Treatment	E: First Aid
1: Very Likely	E	E	H	H	M
2: Likely	E	H	H	M	M
3: Possible	H	H	M	M	L
4: Unlikely	H	M	M	L	L
5: Very Unlikely	M	M	L	L	L

E: Extreme	H: High	M: Medium	L: Low
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Level of risk: Severity – B, Likelihood – 3, Risk level is High (B3)

Risk controls

1. Study the product (Flexible pipe). During the initial planning stage of a Hydrotesting operation, an engineering analysis of the structure & integrity of the flexible products should be performed to identify the pressure associated with fluids and other forces that could adversely affect the integrity of the pipeline or the stability of the drainage and its components.
2. Anchor the de-watering lines. It is accepted industry practice to adequately anchor or secure de-watering piping to prevent movement and separation of the piping.
3. Ensure condition of couplings and parts. All couplings and parts of the de-watering system need to be properly selected for their application. The associated piping which the couplings connect is a significant variable in the entire mechanical piping system. The couplings are

manufactured in a controlled environment, and variations in the quality of the couplings should be limited.

4. Adequate barriers and signage. Hydrotesting is to be performed ONLY at dedicated test bay with adequate warning signage plus Hard barriers (concrete blocks).

5. Provide adequate employee training. This training should instruct employees on de-watering installation designs and techniques, including proper coupling and anchoring methods.

6. Proper Procedures. Employers should ensure that proper installation and de-watering procedures are followed on the job site.

Source of information (e.g. website address):

<https://www.osha.gov/dts/shib/shib062104.html>

Consulting others

The risk assessment shall be consult with HSES personnel, the workers and supervisor who is directly doing the job, operation superintendent and engineer. If required, additional information and advice can be obtained from TechnipFMC Flexible products head quarter in Paris.

Name hazard relating to moving machinery parts

Mobile plants (Jumbo reel carriers, Fork lifts, MEWP etc.) operated in areas where people work, may cause injury through collision.

Nature and scope of hazard

Mobile plant has its nature of hazard as hard surfaces moving together which can cause crushing hazards. It is also possible to become a cutting and puncturing hazard if sharp edge is existed in moving or stationary.

Source of information (e.g. website address):

https://www.commerce.wa.gov.au/sites/default/files/atoms/files/vwa_machine_safety_l.pdf

Determine the level of risk

Matrix	A: Death or permanent disability	B: Serious injury	C: Lost time injury	D: Casualty Treatment	E: First Aid
1: Very Likely	E	E	H	H	M
2: Likely	E	H	H	M	M
3: Possible	H	H	M	M	L
4: Unlikely	H	M	M	L	L
5: Very Unlikely	M	M	L	L	L

E: Extreme	H: High	M: Medium	L: Low
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Level of risk: Severity – A, Likelihood – 4, Risk level is High (A4)

Risk controls

- Risk control of machinery and equipment hazards (general)
- Risk control of mechanical hazards
- Risk control of non-mechanical hazards
- Risk control of access hazards

Source of information (e.g. website address):

https://www.commerce.wa.gov.au/sites/default/files/atoms/files/vwa_machine_safety_l.pdf

Consulting others

The risk assessment shall be consult with HSE personnel, the Mobile plant operator and supervisor who is directly doing the job, and also with the banks man for Mobile plants' operation.

Outcome for Activity 2

- ☐ Satisfactory
☐ Not satisfactory

Trainer/Assessor comments

3.

For the two (2) risks (and associated risk controls) identified in Activity 2:

1. Explain how you would contribute to implementing the risk control
2. Describe how you would evaluate the effectiveness of risk controls that had been implemented
 - e) Consider how you would monitor the risk controls
 - f) How often would you undertake a review of the risk controls?
3. Identify how organisational behaviour and culture may impact on the effectiveness of these controls.
 - g) Identify improvements that could be made to organisational policy, procedures, processes and systems to address these barriers.
 - h) Who would you report your findings and suggested improvements to?

Hazard/Risk 1**Implement risk control**

1. Conduct Risk Assessment
2. Provide signs, barricade at the distance sufficient to demarcate a safe zone to protect personnel and the public from unanticipated pressure release or equipment failure
3. Provide reliable transportation and communication system
4. Establish lines of communication between operator, contractor and local authority. E.g.: Notification to all relevant parties about the activity
5. PTW system
6. Wearing required PPE
7. Adequate lighting
8. whips check
9. Pre-test checks and inspection
10. Training and competency
11. Toolbox talk

Evaluation of risk control

To evaluate the risk control, onsite inspections need to be carry out. In proactive approaches of evaluation, work readiness review audit for all new activity or activity carry out at new working area to ensure HSE preparation is carried out well before the job is required. In addition, Hazard complaint by workers can be also collected to evaluate the effectiveness of the risk control.

Addressing barriers

One of the barriers is local ethical of work and language used to create same understand of HSE practices. Therefore, campaign need to be carried out to improve the perception and HSE awareness.

Hazard/Risk 2**Implement risk control**

1. Job Safety Analysis for Mobile plant operation
2. Dedicated walkways and safe drive way for the mobile plants
3. Tradesman pass training for mobile plant operator to ensure operators are competent for the job
4. Mobile plant daily inspection including reverse siren, alert siren and signals
5. Daily toolbox talk
6. Safe operation procedure of the Mobile plant

Evaluation of risk control

Conduct monthly HSE compliance audit to ensure the Mobile plant operator and supervisor carry out the job accordingly to the standards and procedures.

Addressing barriers

Discipline of mobile plant operator is one of the barrier. To counter this, the management shall set up an HSE rule and disciplinary action if they braches the rule. Performance appraisal annually can be also conducted to ensure the performance of the worker is consistently effective.

Outcome for Activity 3

- ☐ Satisfactory
☐ Not satisfactory

Trainer/Assessor comments

4.

Consider the registration, licensing and certification issues associated with plant:

1. Identify two (2) types of plant requiring registration
 - i) How should registration compliance be monitored and documented?
 - j) Which individuals/parties need to be informed about this information?
2. Identify two (2) workplace tasks which require operator licensing and/or certification (e.g. high risk work)
 - k) How should licensing/certification compliance be monitored and documented?
 - l) Which individuals/parties need to be informed about this information?
3. Identify the training requirements necessary to meet registration, licensing and certification requirements (i.e. for new plant and/or new operating methods).
 - m) What methods would you use to determine training needs?
 - n) Which individuals/parties need to be involved in this process (i.e. involved in training, ensuring that training is undertaken and completed prior to commencement of work)?
 - o) How should training compliance be documented/recorded?

	Explanation
1.	Certain items of plant and types of plant designs must be registered. A list of registrable plant need to be produced and registrable plant must be: - Design registered before it is supplied, and - Item registered before it is used. DESIGN REGISTRATION Design registration is the registering of a completed design, from which any number of individual items can be manufactured. The person applying for design registration may be either the original designer or a person with management or control of the item of plant. ITEM REGISTRATION Plant item registration applies to a specific item of plant and each item requires registration. The purpose of registering an item of plant is to ensure that it is inspected by a competent person and is safe to operate. It is the responsibility of the person with management or control of plant to ensure that all registrable plant items are registered. The registration requirement shall be reviewed every year by the HSE and legal executive to ensure the regulation requirement is always complied and up to date.
2.	WHS regulator need to be informed about the incensing/certification compliances. There are couple of things need to be recorded and monitored. To ensure all the compliance is well followed, a plant compliance list shall be established. This list will record all names of equipment, manufacturer details, purchasing details, serial number, model, location, maintenance schedule and registration, and operator requirement. Then a compliance checklist is also developed to ensure all the regulatory requirement is fulfilled. For example, notify the WHS authorities and registration requirement for specific items of the plant.
3.	To ensure the training needs is fulfilled with the needs of the worker competency, a training needs analysis need to be carry out and it shall cover all the tradesman. Training is not a person matter, it has to be anticipated by respective workers and supervisor for respective subject of training. This training needs analysis shall be recorded down for future audit purpose. For example, if it is forklift operation training, then forklift operator shall attend the meeting but not rigger or fire watcher. They are not relevant to the job. The training need to be recorded by the attendance which is signed by the workers. Identified training plan and the management approval of the training plan shall be also kept well for record purpose.

Outcome for Activity 4	☐ Satisfactory ☐ Not satisfactory
Trainer/Assessor comments	

QUIZ

QUESTIONS	CORRECT
1. Which of the following may impact on WHS risk and the management of WHS? Select all that apply. ☒ Workplace culture towards WHS ☒ Language, literacy and numeracy levels of the workforce ☒ Training being too long and boring ☒ Consistency in the workplace (e.g. shift regularity)	☐
2. Which documents would reflect training requirements of plant operators? Select all that apply. ☒ Training Needs Analysis ☐ WHS regulator website ☒ Professional Development portfolio ☒ Logbook of operational experience	☐
3. A high pressure fluid injury could result from which of the following? Select all that apply. ☒ A leaking hydraulic hose or fitting ☒ A split in an air pipe ☒ A grease gun ☒ Opening a bottle of replacement brake fluid	☐
4. What should be considered when developing strategies for guarding moving parts in machinery? Select all that apply. ☒ Anticipated work practices (e.g. maintenance requirements, workers reaching into machines to free jams or to retrieve things) ☒ Implementing fences or guards that are kept in position while the machinery or plant is operated ☒ Training workers to change practices (e.g. use guards, change dangerous practices such as reaching across moving parts) ☒ Locating lubrication points away from moving parts, if possible ☒ Reported hazards and risk assessments regarding machinery in question	☐
5. According to the <i>Managing risks of plant in the workplace Code of Practice 2013</i>, when isolating an energy source so that multiple people can work on plant, which of the following is best practice? Select your response. ☒ A lock that allows one or more padlocks to be fitted (i.e. one for each person working on the plant) ☐ One padlock for all users ☐ One tag for all users ☐ Multiple tags for each user, no locks	☐

6. Which of the following tasks require a permit to work? Select all that apply.

- ☒ Removal of asbestos
☐ Concreting
☒ Confined space entry
☒ Excavation and demolition
☒ Isolation of energy, plant and equipment
☒ Working at heights

☐

7. Identify the elements of the hierarchy of control, using the labels 1 – 6 below.



Label (1 – 6)	Element
4	Isolate the hazard
6	Provide and use Personal Protective Equipment (PPE)
1	Eliminate the hazard
3	Control the hazard by engineering means
5	Control the hazard by administrative means
2	Substitute the hazard

☐

8. Match the following terms and definitions by placing the corresponding term number next to each definition.

Label	Term
1	Causation
2	Hazard
3	Prevention
4	Risk
5	Foreseeability

Label (1 – 5)	Definition
3	The action of stopping something from happening.
5	That which is seen as the natural result of action/inaction.
4	A measure of the possibility of harm, considering seriousness of injury and likelihood of occurrence.
2	Something which has the potential to harm people.
1	The relationship between conduct and the resulting effect (e.g. injury)

☐

9.	According to the WHS regulator, which of the following activities require a licence? Select all that apply.	☐
	☒ Operating cranes and hoists ☒ Rigging and dogging ☒ Scaffolding ☐ Driving plant on the road	

Outcome for Quiz	☐ Satisfactory ☐ Not satisfactory
Trainer/Assessor comments	

PRACTICAL TASK

You are required to have a suitable observer verify your ability to complete the following tasks. These tasks may be simulated or real.

TASKS		VERIFIED
1.	In a small group, show leadership while conducting a safety audit of plant used in high-risk work that requires a permit. p) Check fluid measurements and guards, as required q) Check logbook and maintenance records r) Observe isolation and tag out systems	☒
2.	In your small group, document potential hazards and their causes in a risk register, identifying: 1. Possible injuries/damage 2. Required control measures (referring to legislative and organisational requirements) 3. Risk assessment results	☒
4.	Collaborate with others to consider current organisational policies/ procedures and offer recommendations for the following areas: 5. Hazard management 6. Monitoring and reporting compliance with regulatory requirements for registration, licensing and certification (including organising training)	☒
7.	Electronically and orally present findings to appropriate persons (e.g. PCBU, Trainer/Assessor). As part of the presentation: 8. Identify the duties, rights and obligations of individuals/parties based on findings of audit 9. Identify factors that will impact on WHS risk management 10. Explain how control measures will be implemented, monitored and reviewed for effectiveness	☒
Name of observer	GekNgo Goh	
Role of observer (Confirm their suitability to sign)	☐ Trainer/Assessor ☒ Other (specify): Corporate HSE Manager Onshore/Offshore TechnipFMC Malaysia	
Phone number of observer	+603 2116 7894	
Email address of observer	gngoh@technip.com	
Signature of observer	 	
Date	7/06/2017	
Comments		

Outcome for Practical Task	☐ Satisfactory ☐ Not satisfactory
Trainer/Assessor comments	