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SARAO OHS BASELINE RISK ASSESSMENT

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TERMS AND DEFINITIONS

Terms	Definitions
AIA	Approved Inspection Authority, approved by the Department of Labour.
Acceptable Risk	Acceptable risk is a risk that has been reduced to a level that can be tolerated by the organization, considering legal obligations, corporate directives and / or guidelines.
Competent Person	A competent person is conversant with theoretical and practical knowledge of the required subject matter.
Hazard	A Hazard is an energy source, situation, object, substance, condition or activity with the potential to cause harm, injury or ill health (and damage).
Hazard Identification	Hazard identification is the process of recognizing hazards and defining its characteristics, in terms of identifying risks.
OHS	Occupational Health and Safety.
Risk	A risk is a combination of the likelihood/ probability of an occurrence of a hazard or exposure(s) and the severity consequence of injury, harm or ill health that can be caused by the hazard.
Risk Assessment	Risk assessment is the process of evaluating risk(s) arising from a hazard(s), taking into consideration the adequacy of any existing control measures, and deciding whether or not the risk(s) is acceptable.

1 INTRODUCTION

1.1 PURPOSE

To identify Occupational Health and Safety (OHS) hazards and assess/evaluate associated OHS risks according to a formal, systematic methodology and holistic approach and to implement necessary control measures to facilitate effective risk reduction.

2 APPLICABLE AND REFERENCED DOCUMENTS

Section 8 – Occupational Health and Safety Act, Act 85 of 1993.

3 RESPONSIBILITY

All designated Line Management. (Is that including HOD, Functional manager, Supervisors etc.)

3.1.1.1 New Construction Regulations 2014

New construction Regulations 2014 have been promulgated on 7 August 2014.

4 PROCEDURE

4.1 ALL ACTIVITIES, PRODUCTS AND SERVICES (INCLUDING CONTRACTORS), WHICH MAY HAVE AN IMPACT ON OPERATIONS AND ACTIVITIES SHALL BE EVALUATED. THE FOLLOWING SHALL BE CONSIDERED AS A MINIMUM

i. Routine, non-routine, abnormal and emergency scenarios/ activities.

ii. On and off-site activities, installations and impacts: design, infrastructure, equipment, materials, resources.

iii. New projects, changes and/ or modifications to equipment, operations or systems.

iv. Human behaviours, safety culture.

v. Management of change – changes in the organizational structure, activities and/ or operations (prior to such changes).

4.2 THE FOLLOWING METHODOLOGY SHALL BE APPLIED

i. Formal identification and documentation of process flows for each department and designation – including activities, inputs and outputs, major installations, resources required, contractors used, legal responsibilities, etc. All processes prescribed shall be documented.

ii. Identify and evaluate hazards and risks according to point 6 (Instructions) below.

iii. Determine and document control measures according to the following order of hierarchy.

- Elimination
- Substitution
- Engineering controls: maintenance, monitoring
- Administrative Controls: signage, warnings, training, safe work procedures
- PPE

5 INSTRUCTIONS

i. Evaluate each health and safety risk, as applicable, (according to a worst-case scenario) against the Risk Criteria descriptions in the Appendix 1 - Consequence and Likelihood.

Note: each hazard may have different risks impacting health and safety respectively.

ii. Select the most appropriate description and record the corresponding numerical value against the specific health and safety risk.

iii. From the allocated consequence level, follow the grid line down to where it meets the allocated likelihood grid line, to obtain a raw risk rating numerical value:

- the maximum risk rating that can be derived is 25
- the minimum risk rating that can be derived is 1

iv. Record control measures developed and implemented to manage risks.

v. Sort health and safety risks according to the following ranges to develop a health and safety risk profile:

- Low Risks - Values 1 - 5
- Medium Risks - Values 6 - 12
- High Risks - Value 13 – 20
- Major Risks - Value 21 – 25

vi. Identify and record additional control measures to reduce risks to an ‘acceptable risk’ level. Implement accordingly.

6 REVIEW

Assessments shall be documented and reviewed at least annually, and/ or after incidents, non-conformances, change of statutory requirements, audit results, surveys, and management of change.

7 RECORDS

i. OHS hazard identification and risk assessments

ii. Occupational hygiene surveys

iii. Management of change assessments/ evaluations

Appendix 1 1: Evaluation Criteria

RISK MATRIX		**CONSEQUENCE**				
Risk Type		**1** Minor	**2** Low	**3** Medium	**4** High	**5** Major
Harm to People – Safety (S)		First aid injury	Medical treatment injury	Lost time injury	Permanent disability or single fatality	More than one permanent disability or multiple fatalities
Harm to People – Health (H)		Temporary discomfort	Temporary alterations / limitations (no lost time)	Reversible impact on health (lost time)	Irreversible impact on health with loss of quality of life or single fatality	Irreversible impact on health with loss of quality of life of more than one person or multiple fatalities
Environmental Impact (E)		Limited to small area (few meters); low sensitivity (industrial area)	Reduced area (hundreds of meters); no sensitive species/habitat	Impact on an extended area (kilometres); sensitive (scarce / valuable environment)	Environmentally sensitive area (endangered species / habitats)	Permanent impact; highly sensitive area (endangered species, wetlands, protected habitats)
LIKELIHOOD	**Considering exposure to that hazard (number of people and frequency of the tasks)**	**RISK VALUE**				
5 (Almost Certain)	The unwanted event is almost certain to happen once or more than once in a six month period.	Medium **11**	High **16**	High **20**	Major **23**	Major **25**
4 (Likely)	There is a high probability that the unwanted event will occur. The unwanted event has occurred or is likely to occur once per year.	Medium **7**	Medium **12**	High **17**	Major **21**	Major **24**
3 (Possible)	It is possible that the unwanted event can occur, less than once a year	Low **4**	Medium **8**	High **13**	High **18**	Major **22**
2	There is a low probability for the unwanted event to occur.	Low	Low	Medium	High	High

(Unlikely)	The unwanted event has occurred or is likely to occur not more than once every 1 to 5 years.	**2**	**5**	**9**	**14**	**19**
1 **(Rare)**	There is a very low probability for unwanted event to occur. There are no records of the event occurring or it is highly unlikely that it will occur within the next 5 to 10 years.	Low	Low	Medium	Medium	High
			3	**6**	**10**	**15**

Appendix 1 2: Hazard Identification and Risk Assessment

HAZARD IDENTIFICATION AND RISK ASSESSMENT FORM2										
No	TASK / ACTIVITY	HAZARD/ENERGY	UNWANTED EVENT/ RISK	LIKELIHOOD	CONSEQUENCE	RISK VALUE	CONTROLS	LIKELIHOOD	CONSEQUENCE	RISK VALUE
1	Site establishment	Injuries during off loading Damage to property and or vehicles. Cuts and burns Rushed activities. Incorrect supervision Management team not identifying existing services. Trip and fall. Cuts	Unauthorized access to site. Inadequate space for construction vehicle and plant movement, working space, stacking and storage space.	5	4	20	Sufficient space to be allowed for site office's establishment, facilities, works execution, plant, and construction vehicle. movement, material and waste stacking and storage within the site boundaries.	3	2	12
2	Fencing construction	The erector must follow the specific position as required.	Hand and back injuries Physical injuries	4	4	12	The site fence must be a minimum of 1.8 m high.	3	3	5

	site	When digging for fence poles, services can be damage. When post get knocked in it can damage services	Incorrect manual handling Lost time injuries Medical treatment cases Interruption of services				Fence installation areas to be demarcated with netting when post and fence is being installed Induction training Task Specific training Supervision Correct PPE to be worn Components stored out of sight Accredited training (If required)			
3	Security	No security in place at entrances to construction site	Unauthorized entry to site Injuries to unauthorized people on site Theft of materials and equipment	3	3	8	The principal contractor must appoint full-time security personnel to control the access onto the site at all times. Dedicated access control sign books to be available for visitors sign in. Security service to be appointed to provide security and access control. Employee cards to be issued to site employees/ contractors Photograph of employees to appear on laminated card The principal contractor to establish site access rules and implement and	2	2	5

							maintain these throughout the rehabilitation period. Access control must, amongst other, include the rule that non-employees will not be allowed on the construction site unaccompanied.			
4	Access control	Construction activities interfering with operational areas	Construction activities and movements causing disruptions to active properties. Site occupant's interaction with construction vehicles which may lead to accidents	4	4	21	Liaison to be in place with properties management regarding the construction project and safety measures to be implemented. Construction site camps and working to be fully barricaded with suitable barriers to separate from the public. Construction site camps and activities to be design in a manner that will not cause disturbances to the occupied areas/ public	3	2	12
HAZARD IDENTIFICATION AND RISK ASSESSMENT FORM2										

No	TASK / ACTIVITY	HAZARD/ENERGY	UNWANTED EVENT/ RISK	LIKELIHOOD	CONSEQUENCE	RISK VALUE	CONTROLS	LIKELIHOOD	CONSEQUENCE	RISK VALUE
5	Incompetent persons Uncontrolled site establishment activities Incorrect stacking procedures	Injuries during off loading Damage to property and or vehicles Cuts and burns Rushed activities. Incorrect supervision Management team not identifying existing services. Trip and fall Cuts	Hand and back injuries Dropping of equipment Physical injuries Incorrect manual handling Potentially fatal accidents Loss of limbs Lost time injuries Medical treatment cases	**4**	**3**	**23**	The principal contractor must ensure that site is established at the correct location as identified by the Client. Principal contractor's OHS file must be approved prior to site establishment begins – aligned to New Construction Regulation 2014	3	3	12

6	Placing of signs and notices	Insufficient information and warning on site requirements	Disruptions Injury to employees Injury to public Damage to property	5	4	13	Construction safety warning signs to be placed at the entrance and should contain the following information minimum: Construction activities ahead No unauthorized entry Speed limit 20 km / h Personal protective equipment signs which include “safety boots, reflective vests & helmets signs.” Visitors to report t site officeNotice board indicating man-hour times worked and incidents / accidents statistics to displayed at the site entrance. First aid kits, name of first aiders and fire extinguishers signs to be displayed where they are located and other required signs as per standards.	3	3	8
7	Notification of construction work	Construction work commences	Construction delays				The Client cannot allow any work to commence without a valid (stamp)			

	And or Construction Work Permit - DOL	without an approved notification. and or Construction Work Permit. Construction of Work Permit not received. Notification application not submitted to DOL within the prescribed time frame	Penalties Contravention notices from DoL.	3	3	8	notification of construction work in place. Work cannot commence without Construction Work Permit Number in place	2	2	4
8	Induction and medical certificate of fitness	Employees entering the site. Are not being inducted. Visitors entering site not being inducted / signing visitors induction form. Induction being conducted on employees without them being. In possession of a valid	Construction delays Penalties Contravention notices from DOL	3	3	8	Site induction can only be done with an employee if the required up to date medical is presented at the induction. Medical fitness certificates must be validated by the principal contractor to ensure adherence to minimum requirements and validity of the document. Each person's ID or valid work permit must be inspected before induction can be allowed on site for the individual.	2	1	3

		medical certificate of fitness in the form of annexure 3. The medical must be conducted by a register Occupational Health Practitioner								
9	List of employees and contractors	Number of employees on site not listed on employee lists Number of contractors on site not listed on contractor list Employee and contractor list not being updated as required	Construction delays Penalties Contravention notices from DOL	2	3	6	Record all employees working on site on the employee list. Record all contractors on site on an updated contractor list. Enter new employees and contractors on the list as soon as they have received the site induction.	1	2	4

10	Formwork and support	Incompetent personnel designing and supervising formwork. Formwork not constructed in accordance with formwork designs and specifications. Removal of formwork before it achieves adequate strength; and	Property damages, Minor injuries	4	4	8	Appoint competent supervisory staff. Formwork to be designed by a Structural Engineer. Ensure checks are done and recorded until the formwork is strong enough to hold on its own. Only skilled employees to be allowed to erect structures and that the skills of these employees are being verified at regular intervals. Steps to be taken to ensure that no structure becomes unstable or	3	2	5

		Overloading of formwork during concrete pouring operations.					collapses due to construction work being performed on it or in the vicinity of it. No structure to be overloaded to the extent where it becomes unsafe. The following information to be requested from the designer and duly considered: Information on known or anticipated hazards relating to the construction work and the relevant information required for the safe execution of the construction work. A geo-scientific report (where applicable). The loading the structure is designed to bear. The methods and sequence of the construction process. Ensure that employees work from the sides of the formwork areas on stable ground as much as possible Supervisor to supervise the activity.			

							PEE should include steel toe gum boots. Use trained and experienced employees as far as reasonably practicable. All formwork to be inspected and certified TMS, SWP, Training. Any other applicable information.			
11	Reinforcement	Insufficient skills to complete the task. Incompetent supervision. Using in appropriate equipment –Improvise. Poor lighting and cluttered access walkways. Inadequate space for steel fixers and their materials; and Accelerated schedules	Failure to use appropriate, equipment, Trip and falls and injuries,	3	3	6	Provide training and improve competency. Appoint competent supervisor. Use the right equipment for the right job. Provide lighting for safe working. Good housekeeping practices Proper planning for the work. Employees to make use of demarcated walkways Foreman and site supervisor to ensure that walkways are clear and proper housing conducted on regular basis	2	2	4

12	Manual handling	Failure to use PPE. Excessive cold or extreme heat Sharp edges Unbalanced items Possible back Injuries Damaged hand tools-picks, shovels etc. Falling over onto items Damaged Wheelbarrows Missing Guards Tips and falls	Potential People injuries, property damage and environmental degradation	3	3	12	Appoint a responsible person to monitor adherence to PPE. Employers to provide adequate PPE. Provide head protection. -Provide adequate water for hydration; and make first aid assistance available with a competent appointed person. Attend to broken tools or replace damaged ones. Provide safety gloves to employees. Stack on even floor, the narrowest base not to exceed 3m. Appoint a stacking supervisor. Replace guard and discontinue use of equipment. Maintain good housekeeping and assign persons to clear up the place regularly	2	1	5
13		Inadequate storing facilities.	Serious injuries Electrocution				Use site establishment checklist to ensure compliance with all items.			

	Housekeeping.	Damage to material and equipment. Accumulation of waste. Environment pollution. Facilities for employees. Electrical installations	Environmental impact Personal injuries Lost time in production Damage to equipment and material. Injuries to occupants and visitors	4	4	24	Toilet facilities & staff welfare as per Construction Reg 2014 Toilets 1:30(regular service) Correct storing facilities for hazardous chemicals. Correct signage for all storage of hazardous materials Proper storing facilities for tool and equipment. Adequate waste bins available. Regular cleaning of these bins Waste recycling is encouraged.	3	2	14
14	Delivery of containers	Soft, sloping grounds Non – complying delivery vehicles and machines Hitting overhead cables Employees walking under container once it is in the air. Unsafe practices	Property damage Injuries Fatalities	4	4	25	Ground where containers are to be placed to be stable to bear the intended weight. Overhead cables to be identified and offloading to be not done under them. Lifting machines to comply with the mass loads designed to carry. Ropes and chains for the lifting machine have a safety factor with	2	2	20

							respect to the load they are designed to lift. Lifting machines operators to have competency certificates from an organization approved by the Chief Inspector. Inspections to ensure all plant and equipment in the operation are safe for use and records to be kept on the file. Supervisor to ensure that the task is done in a safe manner. Banksman to be provided. Area to be demarcated, unauthorized personnel to be not allowed.			
15	Client and Designer duties	Client not following requirements, as stipulated in the regulations. Designers not appointed in	Construction delays Penalties Contravention notices from DOL	3	3	13	Client to follow legal requirements as stipulated in the regulations before and during the construction process. Designers on the project sign agreements in acknowledgement of their duties on the project.	2	2	8

		writing and not made aware of their duties. Designers not following their legal duties throughout the project					Designers to conduct the required inspections and review the required documentation as stipulated in the regulations			
16	Temporary water supply	No proper water supplies available on site	Hygiene related diseases	3	3	8	Only clean water may be used for human consumption and must be marked as safe to be used. Contaminated water areas to be indicated as unsafe for used.	2	1	4
17	Temporary power supply	No COC available for temporary electrical connection used on Site Temporary DB not installed in accordance with legal requirements	Loss of production time Fatality due to electrical Damage of equipment Fire	4	4	25	Electrical installations can only be utilized once COC is issued. Electrical installations must be inspected weakly. Electrical installations must only be done by an appointed. electrical contractor	3	3	12

18	Off-loading material and tools - manual	Heavy loads	Handling heavy loads may result in back and other injuries to employees	2	3	9	Correct manual handling techniques to be promoted through toolbox talks. Mechanical lifting devices must be used where possible. Task Specific Training Operator authorized, competent and medically fit Wearing of correct PPE Load tests for lifting equipment Supervision.	1	1	2
19	Off-loading machinery	Heavy loads	Vehicles and machines may fall over or ''run away'' causing severe injuries	1	4	13	Only an experienced operator may load and off-load machinery. PTO DSTI Method statement Riigging study for over 3Tons	1	3	6
20	Erecting fence/ Barricading construction area	Sharp wire, hand tools, manual labour	Performing manual labour with hand tools in the presence of	1	2	3	Sufficient hand protection must be worn when working with wire.	1	1	1

			sharp edges ma y result in hand, finger and possi bly lower arm injuries				Hand tools must be inspected on a monthly basis and defective tools must be destroyed.			
21	Excavation and filling Trenches	Hard rock material Risk of collapsing excavations Seepage of subterranean water Employees inhaling dangerous fumes Skin contacts with hazardous substances.	Manual handling injuries Lost time injuries First aid treatments	4	3	8	• Method statements • Issue base risk assess-ments • Inspections by excavation supervisor • Proper train operators • Location of services exca-vation and prevent it from collapsing. • Where uncertainty exists regarding the stability of the soil the opinion of a compe-tent professional engineer or professional technologist must be obtained, before excavation proceeds, whose opinion will be deci-sive. The opinion must be in writing and signed by the engineer or technologist as well as the appointed exca-vation supervisor.	2	2	4

							No load or material may be placed near the edge of an excavation if it is likely to cause a collapse of the excavation unless suitable shoring has been installed to be able to carry the additional load.			

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