

SECTION 4
HEALTH, SAFETY AND ENVIRONMENT

DRAFT CONTRACT

TABLE OF CONTENTS

PART 1. GENERAL HSE REQUIREMENTS.....	1
1.1 Compliance with Laws/Regulations/MMHE Requirements	1
1.2 SUBCONTRACTOR's Written Policy/Organisation.....	1
1.3 Protection of Employees, Public, Assets and Environment.....	1
1.4 Right to Stop Work.....	2
1.5 Maintain Equipment, Tools and Machinery in a Safe Condition.....	2
1.6 Risk Management and Hazards Identification	2
1.7 Competent Personnel	2
1.8 HSE Awareness.....	3
1.9 Incident Reporting and Investigation	3
1.10 Housekeeping.....	3
PART 2. SPECIFIC HSE REQUIREMENTS.....	3
2.1 Site Safety and Health Officer (SHO)/Safety Supervisor/Safety Promoter	3
2.2 Project HSE Plan	4
2.3 Equipment, Tools and Machinery Inspections	4
2.4 Personal Protective Equipment (PPE).....	5
2.5 Inspection and Tagging of Mechanical Equipment.....	5
2.6 Working in Confined Space	5
2.7 Permit To Work (PTW)	6
2.8 Tools and Equipment.....	6
2.9 Compressed Gas Cylinders.....	7
2.10 Welding and Cutting	7
2.11 Abrasive Wheels	7
2.12 Grit Blasting	8
2.13 Use of Chemicals.....	8
2.14 Use/Handling of Asbestos or Asbestos-Containing Material.....	8
2.15 Electrical Safety / Power Source	8
2.16 Excavation	9
2.17 Barricade, Platforms and Guardrails.....	9
2.18 Scaffolding	9
2.19 Office.....	10
2.20 Storage/Warehouse	10
2.21 Explosives.....	11
2.22 Driving Safety.....	11
2.23 Transportation.....	12
2.24 Use of Public Road	12
2.25 Lifting	12
2.26 Heavy Machinery	12
2.27 Working at Height	13
2.28 Air Hose	13
2.29 Radiography.....	13
2.30 Job Safety Analysis (JSA) / Job Hazard Analysis (JHA)	13
2.31 HSE Inspection/Audit.....	13
2.32 HSE Induction.....	13
2.33 HSE Toolbox Meeting.....	14
2.34 HSE Meetings	14
2.35 Occupational Health	14
2.36 Health Risk Assessment.....	15
2.37 Employees Welfare.....	15
2.38 Drugs and Alcohol.....	15
2.39 Environmental Management.....	16
2.40 Emergency Response and Preparedness.....	16
2.41 SUBCONTRACTOR Training Records.....	16
2.42 HSE Performance Targets.....	16
2.43 SUBCONTRACTOR HSE Performance Reports	17
2.44 Incident Notification and Investigation	17

TABLE OF CONTENTS

PART 3. CONSEQUENCE MANAGEMENT FOR HSE NON-COMPLIANCE 17

 3.1 List of HSE Non-Compliance 17

 3.2 Category of Non-Compliance 20

 3.3 Process Flow on Consequence Management for HSE Non-Compliance 21

ATTACHMENT 1: PPE STANDARDS AND TECHNICAL SPECIFICATIONS 1

DRAFT CONTRACT

PART 1. GENERAL HSE REQUIREMENTS

1.1 Compliance with Laws/Regulations/MMHE Requirements

- (a) SUBCONTRACTOR shall comply with all applicable Health, Safety and Environment (HSE) laws and regulations including fire, which are applicable to the location where the WORK are being carried out.
- (b) SUBCONTRACTOR shall indemnify MMHE against all legal costs, fines and compounds imposed and claims and damages incurred as a result of breach or non-compliance with any relevant laws and regulations.
- (c) SUBCONTRACTOR shall comply at all times with the requirements as set forth by MMHE in its Health, Safety and Environment Management System (HSEMS), policies, operating standards, Site HSE requirements, MMHE 10 Safety Rules, any special instructions, and all requirements stipulated in this SUBCONTRACT. These requirements are intended to supplement any known or ought to be known laws and regulations applicable at the location where the WORK are being carried out.
- (d) SUBCONTRACTOR shall take all necessary HSE precautions related to or arising out of the performance of the SUBCONTRACT in order to protect the work, the personnel and property of MMHE, contractor, SUBCONTRACTOR, all third parties and public from the hazards and risks associated with the work.

1.2 SUBCONTRACTOR's Written Policy/Organisation

- (a) SUBCONTRACTOR shall acknowledge MMHE strong commitment to HSE and affirm that it has a written HSE policy which is of a standard comparable to MMHE HSE policy and which has been signed and is actively supported and endorsed by SUBCONTRACTOR's top management.
- (b) SUBCONTRACTOR shall further affirm that its HSE policy is widely disseminated and understood among contractor and SUBCONTRACTOR's employees.

1.3 Protection of Employees, Public, Assets and Environment

- (a) SUBCONTRACTOR shall protect the safety and health of employees and people living or working near the activity from potential hazards and risks created by that activity. SUBCONTRACTOR, without cost to MMHE, shall take all necessary precautions and mitigation measures to protect the employees and the public to minimize disturbance and inconvenience to the public resulting from performance of the work.
- (b) Throughout performance of the work, SUBCONTRACTOR shall execute the WORK and conduct all operations in such a way as to minimize any impact upon the natural environment including compliance with all laws and regulations and rules applicable to the Site e.g. Environmental Management Programme (EMP), Approval Conditions, etc. SUBCONTRACTOR shall agree to indemnify MMHE and consultants of MMHE for all claims, damage costs and penalties relating to any environmental damage or loss or non-compliance with any laws or regulations arising out of SUBCONTRACTOR and/or sub-contractor performance of WORK.

1.4 Right to Stop Work

- (a) MMHE representative or his designated representatives shall have the right to prohibit commencement of WORK or to stop any WORK in progress if the equipment, machinery, personnel or work conditions are considered at MMHE's discretion to be unsafe or not to be in compliance with any applicable rules, regulations and procedures in MMHE.
- (b) Stoppage of the work shall be at SUBCONTRACTOR's expense until SUBCONTRACTOR has satisfactorily rectified such defects and unsafe conditions. In the event of serious or repeated infringements, MMHE may terminate the SUBCONTRACT without compensation.

1.5 Maintain Equipment, Tools and Machinery in a Safe Condition

SUBCONTRACTOR shall ensure that all SUBCONTRACTOR's machinery, tools, equipment, facilities and other items in any way associated with or utilized in the work are fit for use and maintained in a safe and good working condition. Certificates of Fitness, Calibration Certificates, etc. where applicable shall be provided.

1.6 Risk Management and Hazards Identification

- (a) SUBCONTRACTOR shall make an initial assessment of the HSE risks involved in the execution of the WORK. The focus of the assessment should be to evaluate the inherent hazards in conducting the work and the potential adverse consequence of an accident to the employees, the public and the environment, MMHE assets and reputation. SUBCONTRACTOR shall take appropriate preventive and mitigation measures to prevent incidents from occurring and to minimize the consequence of an event should it occur.
- (b) SUBCONTRACTOR shall conduct HSE inspections and audits to ensure that such preventive and mitigation measures are in place and implemented. SUBCONTRACTOR shall promptly take actions on all recommendations made pursuant to the said inspections and audits.

1.7 Competent Personnel

- (a) SUBCONTRACTOR shall ensure that competent personnel are fully trained and certified to carry out the task of operating all machinery, equipment and tools. Certificate of competency shall be provided where applicable. SUBCONTRACTOR shall provide an adequate level of technical and HSE related training conducted by a recognized training institution for all relevant personnel in connection with the work.
- (b) All SUBCONTRACTOR supervisory personnel shall attend relevant HSE training and be competent in hazard identification and risk assessment.
- (c) SUBCONTRACTOR shall ensure that all SUBCONTRACTOR and sub-contractor's personnel engaged in the WORK are healthy and fit, and possess the experience and skill required to perform the WORK safely.
- (d) SUBCONTRACTOR shall register their competent personnel for tradesman/operator competency passes for traceability and control at Site.

1.8 HSE Awareness

- (a) SUBCONTRACTOR shall be responsible for maintaining and enhancing the HSE awareness among its personnel and sub-contractor's personnel, including arranging safety induction, toolbox meetings, regular HSE meetings and emergency exercises and drills.
- (b) Findings of hazard identification and risk assessments including Job Safety Analysis shall be communicated to SUBCONTRACTOR's and sub-contractor's personnel. Copies of minutes of SUBCONTRACTOR safety meetings shall be submitted to MMHE.

1.9 Incident Reporting and Investigation

- (a) SUBCONTRACTOR shall report to MMHE immediately of the occurrence of any incident including near misses as per MMHE incident reporting requirements. The SUBCONTRACTOR shall be responsible for reporting incidents to Department of Occupational Safety and Health (DOSH) if applicable.
- (b) All incidents that result in or have the potential to cause serious injury or property damage or pollution or damage to the environment shall be suitably investigated by the SUBCONTRACTOR and reported to MMHE. For major incident, SUBCONTRACTOR shall provide full cooperation and support to the independent investigation team appointed by MMHE.
- (c) SUBCONTRACTOR shall maintain accurate incident and injury reports and shall comply with MMHE's requests for information relating to accidents, injury or illnesses.

1.10 Housekeeping

- (a) SUBCONTRACTOR shall ensure that good housekeeping is maintained continuously throughout the duration of the work. Due regard shall be paid to proper disposal of all types of wastes especially hazardous/scheduled wastes, tidiness, and clear access ways and emergency exits.
- (b) Access and egress of all exits, fire and safety equipment, and work areas shall be kept clear of obstructions at all times. Special attention shall be given to maintaining clear walkways, removal of slippery and tripping hazards, securing or removing of loose material at height, and proper storage of material. Scheduled wastes such as oily or chemical soaked rags shall be disposed of in accordance to regulatory requirements. All housekeeping costs shall be borne by SUBCONTRACTOR.

PART 2. SPECIFIC HSE REQUIREMENTS

2.1 Site Safety and Health Officer (SHO)/Safety Supervisor/Safety Promoter

- (a) SUBCONTRACTOR shall, at its own costs, provide such numbers of qualified SHOs or Safety Supervisors or Safety Promoters who will be responsible to provide guidance and advice pertaining to Health, Safety and Environment (HSE) requirements of WORK. The SHOs or Safety Supervisors or Safety Promoters shall guide SUBCONTRACTOR's management on HSE plan and its implementation, with equal diligence being paid to fulfillment of the contractual requirements.

- (b) In addition to the ongoing monitoring of the Site, the SHOs or Safety Supervisors or Safety Promoters shall also perform a formal inspection or audit of the Site at least once every week to identify and correct any non-compliances noted. A written record of all inspections, audits and their status of action follow-ups shall be provided to MMHE representative.
- (c) SHOs or Safety Supervisors or Safety Promoters shall not be involved or assigned to other part-time work other than as HSE officers. SUBCONTRACTOR shall ensure that at least one (1) SHO or Safety Supervisor or Safety Promoter is at the workplace per work shift to ascertain that every activities in the worksite is conducted in a safe manner.
- (d) Prior to start of WORK, SUBCONTRACTOR shall submit the CV of the proposed SHOs or Safety Supervisors or Safety Promoters for MMHE approval.
- (e) The SHO or Safety Supervisor or Safety Promoter shall be considered as the key personnel on HSE matters and shall be removed and replaced if deemed to be lacking in promoting HSE at the work site by MMHE HSE officer.

2.2 Project HSE Plan

- (a) Prior to mobilization, SUBCONTRACTOR shall prepare and submit a project specific HSE plan to MMHE which, as a minimum, contains the followings:
 - (i) HSE policy, targets and requirements
 - (ii) Prevailing laws and regulations
 - (iii) SUBCONTRACTOR HSE policy
 - (iv) SUBCONTRACTOR's organization including positions for HSE manager and SHO
 - (v) HSE responsibilities of SUBCONTRACTOR key personnel
 - (vi) Risk assessments including preventive and mitigating measures
 - (vii) Description and schedule of HSE activities
 - (viii) Incident reporting and investigation
 - (ix) Emergency response plan
- (b) MMHE's review or comments on such plan shall not relieve, nor shall such review and comments be construed as limiting in any manner the SUBCONTRACTOR's obligations to undertake any action which may be necessary to establish and maintain safe working conditions at the location where the WORK are being carried out.

2.3 Equipment, Tools and Machinery Inspections

- (a) Prior to start of Work, SUBCONTRACTOR shall inspect the equipment, tools and machinery required in connection with the WORK including but not limited to cranes, bulldozers, trucks, tractors, dredgers, barges, etc. to ensure the safe execution of WORK.
- (b) In addition, SUBCONTRACTOR shall maintain and perform continuous HSE inspection and audits throughout the WORK and shall promptly implement all recommendations made pursuant to the said inspection and audits.
- (c) MMHE shall have the right to conduct its own HSE inspection and audits at work site. SUBCONTRACTOR shall comply with all recommendations arising from such inspection and audits.

- (d) SUBCONTRACTOR shall ensure that all fuel powered and electrical equipment meet the requirements of hazardous area classification including any requirements on fuel burning equipment by authorities and is equipped with approved spark arrestor.
- (e) SUBCONTRACTOR shall ensure that only competent personnel who are certified are allowed to operate and/or maintain equipment, tools and machinery.

2.4 Personal Protective Equipment (PPE)

- (a) SUBCONTRACTOR shall at its own costs, supply its personnel and SUBCONTRACTOR's personnel required in connection with the WORK with adequate PPE, provide training on the uses and maintenance of PPE and strictly enforce the use of such PPE on their employees. SUBCONTRACTOR shall purchase PPE in accordance to the specification as per **Attachment 1 – PPE STANDARDS AND TECHNICAL SPECIFICATIONS**.
- (b) SUBCONTRACTOR and sub-contractors shall not charge its personnel for such PPE.

2.5 Inspection and Tagging of Mechanical Equipment

- (a) SUBCONTRACTOR shall upon arrival at the work site, inspect and tag all mechanical equipment that is to be utilized for the WORK.
- (b) The equipment will include but may not be limited to the following:
 - (i) Cranes
 - (ii) Forklifts
 - (iii) Self-Loading Trucks
 - (iv) Semi-Trailers and Prime Movers
 - (v) Compressors
 - (vi) Temporary Electrical Distribution Boards
 - (vii) Scaffolding Equipment
 - (viii) Rigging Equipment
 - (ix) Aerial Work Platforms
 - (x) Welding Machine
 - (xi) Grinding and Cutting Machine
- (c) All equipment inspected that requires remedial work (or replacement) shall be carried out at SUBCONTRACTOR's costs.
- (d) All equipment inspected and accepted for use on the work shall be clearly identified by a tagging system.

2.6 Working in Confined Space

- (a) Confined space entry shall be authorized through MMHE's Permit To Work approval process. SUBCONTRACTOR shall take adequate precautions and mitigation measures which include, but not limited to gas/oxygen tests, PPE requirements, respiratory protection equipment, isolation of connections to confined space, provision of ventilation equipment and preparation of confined space for safe entry, standby person, availability of rescue equipment and Emergency Response Team (ERT).
- (b) The SHO or entry supervisor shall ensure that all necessary precautions and mitigation measures are implemented.

- (c) SUBCONTRACTOR's entrants shall be certified medically fit by the MMHE appointed Occupational Health Doctor (OHD) before they are allowed to work in confined space.
- (d) SUBCONTRACTOR shall ensure that its and its sub-contractors employees are trained prior to entering confined space and shall assign standby person at the confined space entrance.
- (e) SUBCONTRACTOR shall be responsible in communicating to all its employees prior to entering into any confined spaces on the followings:
 - (i) Not to enter with no lighting and ventilation installed
 - (ii) Not to enter with no display board to indicate gas check conducted and valid Permit To Work
 - (iii) Not to enter with "NO ENTRY" display
 - (iv) Not to enter with presence of fume, vapour, gas or other substances which can be hazardous to health
 - (v) Not to enter without at least one (1) stand by person stationed outside the confined space to monitor and communicate regularly with the authorized entrants for the whole duration of entry operations

2.7 Permit To Work (PTW)

SUBCONTRACTOR shall implement MMHE's PTW procedure where SUBCONTRACTOR activities require the application of such PTW. This includes hot work, lifting, confined space entry, radiography, and pressure testing. Authorized MMHE supervisors shall approve the permits and certificates. SUBCONTRACTOR shall continuously enforce the conditions and requirements of the permits including its validity. SUBCONTRACTOR's supervisors shall attend the PTW training. Costs incurred in the implementation of PTW shall be borne by SUBCONTRACTOR.

2.8 Tools and Equipment

- (a) SUBCONTRACTOR shall ensure that all SUBCONTRACTOR's machinery, tools and equipment, facilities and other items associated with the WORK whether purchased or rented are maintained in a safe condition and to be operated by competent operators. Tools shall only be used for the job they were designed to perform. All guards shall be fitted and shall be in good condition at all times.
- (b) All grinding discs shall be checked for correct size and speed prior to fitting. Electrically powered tools shall meet the hazardous zones requirements where applicable. All electrical cables shall be industrial type. Use of domestic electrical cables is prohibited.
- (c) SUBCONTRACTOR shall repair or replace defective tools and equipment at SUBCONTRACTOR's costs. Appropriate personal protective equipment shall be worn at all times when using any tools or equipment.
- (d) SUBCONTRACTOR shall ensure that all tools shall be periodically inspected and tagged as per tool tag system requirement.

2.9 Compressed Gas Cylinders

SUBCONTRACTOR shall ensure that:

- (a) Compressed gas cylinders stored, or transported or used shall be in an upright position and secured to some substantial object or structure by a chain or other suitable means capable of supporting the weight of the cylinder. This applies to all cylinders, whether empty or full.
- (b) Cylinder valves shall be closed and hoses depressurized when cylinders are not in use.
- (c) Cylinders shall have protective valve caps in place while they are being transported / stored.
- (d) Cylinders shall be returned promptly to a suitable storage area after use. They shall not be left at any work site. Cylinder storage areas should be kept away from general traffic paths and shall not be adjacent to vehicle paths.
- (e) Flammable gases and oxygen cylinders shall not be stored in close proximity unless separated by a non-combustible wall.
- (f) Cylinders shall only be hoisted when enclosed in an approved box or cradle within which they are securely fastened.
- (g) Cylinders shall be identified by a color code in accordance with Malaysian or respective national standards.
- (h) Gas cylinders shall have hose check valve (non-return valve). Flashback arrestors shall be installed to quench flashback flames and cut off the gas flow automatically, in both oxygen and fuel gas outlet lines.

2.10 Welding and Cutting

- (a) SUBCONTRACTOR shall ensure only competent and authorized employees are allowed to use welding and cutting equipment. SUBCONTRACTOR shall ensure suitable precautions and mitigation measures against exposure of welding hazards such as excessive ultraviolet radiation, fire, welding fumes and dusts are put in place.
- (b) Welding and/or flame cutting in the vicinity of flammable or combustible substances/material shall only be done under the control of a PTW.
- (c) SUBCONTRACTOR shall provide adequate number of fire watchmen including suitable fire extinguishers at the sites where hot work are taking place. Fire watchmen and welders shall be trained and competent in the use of fire extinguishers.

2.11 Abrasive Wheels

- (a) SUBCONTRACTOR shall ensure that safety protection in the form of safety glasses, full face shields and hearing protection devices are provided and utilized by the personnel working with grinding machines and abrasive wheels. When changing discs on a portable grinder, it is imperative that a suitable replacement disc is fitted and installed in the correct manner. SUBCONTRACTOR shall ensure only trained and competent personnel are permitted to carry out this task.
- (b) SUBCONTRACTOR shall ensure full compliance to Grinding Safety Requirement. All grinding machines/tools shall be equipped with the 'dead-man switch'.

2.12 Grit Blasting

- (a) SUBCONTRACTOR shall confirm with MMHE the need for hot work permit prior to grit blasting. SUBCONTRACTOR shall provide the blaster with an approved air face mask and oil free air supply. Associated employees and any other personnel within the blasting area shall wear approved respiratory protection. The blasting gun shall have a 'dead-man' safety device operated by the blaster. Under no circumstances the device shall be tied back or defeated.
- (b) SUBCONTRACTOR shall made efforts to minimize the exposure of the blasting grit to the surrounding environment. Protective shield shall be erected and notice board shall be posted in order to prevent exposure of the blasting grit to other employees in the vicinity.

2.13 Use of Chemicals

- (a) SUBCONTRACTOR shall declare any hazardous chemicals used for the WORK to MMHE. SUBCONTRACTOR shall ensure all requirements for use, storage, handling and transportation of chemicals including personal protection outlined in the Safety Data Sheet are strictly followed. The Safety Data Sheets for all chemicals shall be made available in the languages stipulated under the law. When in doubt concerning these requirements, consult MMHE HSE personnel.
- (b) Flammable chemicals such as solvents and cleaning agents shall not be stored or used in unventilated areas or in close proximity to any sources of ignition. These chemicals shall be stored in a proper storage facility outside the work area whenever they are not being used. Proper labeling and re-labeling of the chemical containers shall be done accordingly. Source of ignition such as smoking is strictly prohibited in the vicinity of any such chemical.

2.14 Use/Handling of Asbestos or Asbestos-Containing Material

The use of any asbestos or asbestos-containing material is strictly prohibited for WORK related to the SUBCONTRACT. For work that requires handling/removal of asbestos or asbestos-containing material at Site, SUBCONTRACTOR shall take the necessary precautions to ensure protection of their employees and others from the risks of exposure to asbestos fibers. SUBCONTRACTOR shall make reference to MMHE's representative to determine if the WORK to be undertaken may involve handling of asbestos or asbestos-containing material.

2.15 Electrical Safety / Power Source

- (a) No part of any lifting device or any equipment operated near power lines shall be closer than below:

<u>Voltage</u>	<u>Safe Distance</u>
150 – 750V	2.0m
750 – 50kV	3.0m
50kV – 250kV	4.5m
>250kV	6.0m

- (b) The above clearance applies in all directions. All overhead lines shall be identified with a highly visible sign placed 7m from both sides of the lines, 1.8m above ground. A restriction guard pole connected with ropes shall be installed to restrict clearance close to power lines.

2.16 Excavation

SUBCONTRACTOR shall ensure that all excavation work shall meet the following requirements as a minimum:

- (a) Excavation work shall be subjected to the control of PTW and Job Safety Analysis (JSA).
- (b) Prior to embarking excavation work, proper excavation design and plan shall be drawn up taking into consideration of the soil type, the weather conditions and proximity to facilities.
- (c) Walkways between trenches should be kept clear of obstruction.
- (d) A competent person shall inspect all excavations, shafts, tunnels and earthwork.
- (e) A standby person shall be made available at all times equipped with all necessary safety equipment.
- (f) All excavation exceeding 1.5 meters shall be shored and a PTW complete with confined space certificate shall be secured.
- (g) No mechanical excavation within 1 meter of the existing service shall be allowed. All underground services shall be hand exposed and identified.

2.17 Barricade, Platforms and Guardrails

- (a) SUBCONTRACTOR shall provide adequate barricades, covers, guardrails, signal flag persons or other appropriate warning devices to protect personnel near any hazardous operations or overhead work. Temporary covers for floor openings shall be firmly fastened and clearly identified by warning signs. All elevated work areas, walkways, platforms etc. whether permanent or temporary, shall be protected by an approved guardrail and shall provide a sturdy working space. SUBCONTRACTOR shall provide all the necessary signs, barriers, signal flag persons, etc. to protect the general public from exposure to injury due to the work.
- (b) All legislated and MMHE requirements for warning signs and/or barriers adjacent to public roads shall be strictly adhered to.

2.18 Scaffolding

- (a) A safe means of access shall be provided for any work to be carried out at a height greater than 2 meters above ground. If a suitable permanent access is not available, a well-designed, erected, inspected and maintained scaffold will provide a safe means of access and safe working areas. Additionally safe access to scaffold work platforms by ladder shall be provided. All scaffoldings shall be constructed in accordance with Japanese Industrial Standard (JIS) for Marine Repair and Conversion projects and BS 1139 – Metal Scaffolding for Engineering and Construction projects.
- (b) All scaffolding material and components shall be as follows:
 - (i) Scaffolding tubes
All tubes shall be galvanized steel tubing and comply with JIS or BS 1139, and free from cracks, splits or excessive corrosion and straight.
 - (ii) Coupling and fittings
They shall be of sound construction, comply with JIS or BS 1139.
 - (iii) Board or decking

All scaffolding boards shall be of *keruing* woods and shall meet the Regulation 87 of Factory and Machinery Act, 1967.

(iv) Ladders

Ladders shall meet JIS or BS.

(v) Frame or tubular scaffolding

Propriety steel frame or tubular scaffolding of sound design and construction shall be approved by MMHE before use.

(vi) Inspection

Scaffolding inspector shall inspect all scaffolding material. Any scaffolding above 40 meters (BS material) and 15 meters (JIS material) shall be designed and endorsed by a professional structural engineer and copy of design shall be forwarded to Department of Occupational Safety and Health (DOSH).

(vii) Erection

Scaffolding shall only be erected, altered or dismantled by competent scaffolder under supervision of a scaffolder supervisor. All inspection of scaffolding shall be done by a competent scaffolder inspector.

2.19 Office

SUBCONTRACTOR shall maintain comfortable working condition in office as follows:

- (a) Temperature 20 – 26°C
- (b) Humidity 40 – 60%
- (c) Adequate ventilation
- (d) No smoking policy
- (e) Adequate lighting comfortable to the eyes at 400 lux
- (f) Office space at 6.25m² per work station
- (g) Welfare facilities e.g. toilet, prayer room and eating areas
- (h) Daily cleaning service
- (i) Passage ways are cleared and tripping hazards identified and removed
- (j) Emergency plans for evacuation
- (k) Car park well lit and vehicle movement controlled
- (l) First aid boxes provided

2.20 Storage/Warehouse

SUBCONTRACTOR shall provide appropriate storage facilities for the storing of material, chemical and fuel on Sites. The requirements for storing of material shall also include the following:

- (a) Construction material shall be stored at the designated locations on Site
- (b) Written procedures on transportation, handling and disposal for all material shall be made available
- (c) Good housekeeping shall be practiced at all storage facilities
- (d) Storage areas shall be located away from heavy vehicle traffic areas
- (e) Storage floors and bins shall be labeled and constructed to safely support the loads with maximum safe load limits posted

- (f) Storage buildings and warehouses shall be provided with an approved lightings and fittings in compliance with hazardous area classification, well ventilated and constructed with chemical resistant flooring, spill containment, waste collection and treatment where appropriate for the chemicals or fuel stored.
- (g) All hot work including welding, cutting or any other operations that create sparks shall be controlled via PTW system inside a warehouse or near the flammable/combustible material storage yards
- (h) Adequate number of fire extinguishers of appropriate type shall be made available at strategic locations at all storage areas and warehouses
- (i) All personnel shall wear approved PPE whilst working in storage areas and warehouses
- (j) Flammable and combustible liquids shall be stored separately in different storage buildings
- (k) Storage rooms shall be constructed to meet the specified fire resistant rating suitable for their use
- (l) Approved safety cans/cabinets/containers shall be used to store and transfer flammable and combustible liquids, with the name of the material clearly stamped.
- (m) 'No Smoking' signs shall be posted at strategic locations in storage areas and warehouses storing flammable and combustible liquids

2.21 Explosives

- (a) SUBCONTRACTOR shall obtain all relevant permits and comply with the regulatory requirements for the use of explosives.
- (b) SUBCONTRACTOR shall ensure that every reasonable precaution and mitigation measures will be taken to ensure that SUBCONTRACTOR personnel handling the explosives comply with established industry standards and best practices in the safe transportation, storage, handling and usage of explosives.

2.22 Driving Safety

- (a) SUBCONTRACTOR personnel traveling to and from work site shall use proper means of transport. Such transport shall comply with the regulatory requirements. Transportation of personnel in open trucks is prohibited unless fitted with seats and approved by authority to carry passengers. SUBCONTRACTOR shall be responsible to provide safe access and egress to the work site for green field project.
- (b) SUBCONTRACTOR shall comply with MMHE speed limit throughout MMHE's premises. Violation will result in the driver having to surrender his vehicle entry pass.
- (c) SUBCONTRACTOR shall enhance the awareness of safe driving amongst its employees and sub-contractors through provision of defensive driving training. This training shall include wearing of seat belt, observing speed limit, maintain good vehicle condition, driving defensively and possess valid driving license.

2.23 Transportation

When the travel is by land, sea or air, SUBCONTRACTOR is obliged to follow both MMHE and established industry guidelines for the safe transport of personnel and equipment. In the event that MMHE is providing a means of transport for either personnel or equipment, then SUBCONTRACTOR and SUBCONTRACTOR's personnel should adhere to the instructions and requirements of MMHE.

2.24 Use of Public Road

SUBCONTRACTOR shall keep public roads free from debris due to vehicle movement to and from the work site. SUBCONTRACTOR shall provide washing facilities at Site to clean vehicle tires. In the event of spillage onto the road, SUBCONTRACTOR shall undertake the cleaning at their own cost.

2.25 Lifting

- (a) All cranes supplied by SUBCONTRACTOR shall have valid certificate of fitness issued by authority e.g. PMA certificate issued by DOSH Malaysia. All cranes shall be inspected, tested and witnessed by MMHE competent person before putting them into service. All associated lifting equipment shall be inspected.
- (b) SUBCONTRACTOR shall inspect and maintain all cranes to ensure they are in safe working conditions. All defective cranes shall be taken out of service, repair or replace if necessary. Whenever there is any doubt on the integrity of the crane, load test shall be performed at SUBCONTRACTOR's cost.
- (c) A color coding shall be used to identify inspected lifting appliance. SUBCONTRACTOR shall comply with the MMHE's PTW and JSA requirements for lifting of 20T and above. SUBCONTRACTOR is responsible for ensuring that a competent and authorized operator operates any lifting devices and that a signal man is designated to signal the operator as necessary to properly place and control the loads.
- (d) Prior to performing any lift, the operator shall determine the weight of the object being lifted and ensure that cables, lifting devices, slings, wire ropes, chains, etc. used are of sufficient strength to support the weight of the load.
- (e) No employee shall be allowed under the load. Tag lines shall be used to guide and control the load where excessive movement is possible.
- (f) A competent employee shall inspect all wire ropes, chains and slings prior to performing any lift. Record of inspection shall be kept for MMHE's review. During winch or tow, all personnel shall be clear of the 'whip area' of cable/rope under tension.

2.26 Heavy Machinery

- (a) All SUBCONTRACTOR vehicles on any work site shall have proper insurance and maintain in safe operating conditions.
- (b) All heavy machinery shall be operated by competent and certified operators. They shall be operated in a safe manner and at a speed suited to the terrain and weather conditions.
- (c) All cranes, stringing trucks, heavy tracked equipment and machinery, welding rigs and all vehicles shall be fitted with reverse alarms.
- (d) Any vehicles with restricted vision shall not operate in the vicinity of workers, except under the direction of a designated worker who is ensuring that the path way is clear and safe.

2.27 Working at Height

- (a) When working at height more than 7.5 meters, SUBCONTRACTOR shall provide suitable safety nets, which extends 2.5 meters beyond the edge of work level. The nets shall be sufficiently anchored using steel hooks or shackle. The net shall be inspected daily.
- (b) If safety nets cannot be used, SUBCONTRACTOR shall provide fall protection devices such as full harness with double lanyards etc. to the workers. Fall protection is required when working above 2 meters. Personnel using fall protection shall be trained on its use.

2.28 Air Hose

Air hose should not be used to clean any part of the body or clothing or use to blow off dirt on the floor.

2.29 Radiography

SUBCONTRACTOR shall obtain a PTW c/w radiation certificate for radiography work. Extra precaution shall be taken to keep away all non-relevant personnel from the area. The area shall be isolated by visible barricades, signs, warning lights, etc. The source shall be stored according to approved procedure. SUBCONTRACTOR shall employ only qualified radiography operators for the job. Properly calibrated radiation survey meters shall be made available.

2.30 Job Safety Analysis (JSA) / Job Hazard Analysis (JHA)

Prior to performance of WORK, SUBCONTRACTOR shall implement JSA/JHA as a safety precaution to eliminate or guard against hazards of a specified job. The JSA/JHA methodology shall include the following:

- (a) Study the job and develop basic job steps
- (b) Identify the hazards for each job step
- (c) Identify the safety precautions and mitigation measures to be taken for each job step
- (d) Record the JSA/JHA and brief all workers on the hazards, precautions and mitigations to be taken

2.31 HSE Inspection/Audit

Prior to performance of WORK, SUBCONTRACTOR is required to inspect the work site and equipment to ensure that WORK can be performed safely. In addition, SUBCONTRACTOR shall perform continuous HSE inspection/audit throughout the WORK and shall promptly implement all recommendations made pursuant to the said inspection/audit. MMHE shall have the right to conduct its own HSE inspection/audit at the work site. SUBCONTRACTOR shall comply with all recommendations arising from such inspection/audit.

2.32 HSE Induction

2.32.1 NIOSH-OSFAM Safety Passport (NOSP) for Engineering and Construction Projects

- (a) SUBCONTRACTOR shall identify its employees who will be required to attend the NOSP training. The training shall be conducted by NIOSH or MMHE. NOSP training shall be applicable to all SUBCONTRACTOR's and sub-contractor's employees working in MMHE premises.

- (b) Each worker who has attended the NOSP training and passed the assessment will be issued with NOSP card.

2.32.2 MMHE HSE Induction for Marine Repair Projects

SUBCONTRACTOR shall identify its employees who will be required to attend the MMHE HSE Induction. The training shall be conducted by MMHE and shall be applicable to all SUBCONTRACTOR's and sub-contractor's employees working in MMHE premises.

2.32.3 Project HSE Induction

- (a) SUBCONTRACTOR shall attend a project HSE induction for the Site. SUBCONTRACTOR shall identify its employees who will be required to attend the HSE induction program. The induction briefing shall be applicable to all SUBCONTRACTOR's and sub-contractor's employees. Briefing shall be done at Site prior to the commencement of the WORK.

- (b) Each employee who has attended and completed the HSE induction program shall be issued with a sticker to indicate that he has completed the HSE induction course. The sticker shall be displayed on the safety hat and worn at Site.

2.33 HSE Toolbox Meeting

SUBCONTRACTOR shall ensure that his appointed WORK supervisor hold HSE toolbox meeting for about 5 – 10 minutes daily prior to each shift. Specific topics shall include hazards relevant to current work, review of accidents, near misses and deficiencies and any new equipment or machinery. SUBCONTRACTOR shall maintain records of attendance and submit to MMHE as and when required.

2.34 HSE Meetings

SUBCONTRACTOR shall form a HSE Committee at work site and shall hold regular meetings, minimum monthly to create and maintain an active interest in HSE. The meeting shall be attended by SUBCONTRACTOR's management and employee's representatives and chaired by MMHE Site manager. Minutes of meeting shall be distributed to all attendees.

2.35 Occupational Health

- (a) SUBCONTRACTOR shall ensure that all its employees and sub-contractor's employees engaged in the work are medically fit for the job and healthy. Any medical diseases or disabilities which may adversely influence the employee's ability to perform his role in the work shall be reported to MMHE prior to the commencement of the work.

- (b) All SUBCONTRACTOR's and sub-contractor's employees shall undergo medical examination once in every 2 years. The minimum medical examination requirements are:

- (i) Consultation and clinical (physical) examination by Certified Doctor
- (ii) Chest X-Ray
- (iii) Urine FEME (Urinalysis)

- (c) SUBCONTRACTOR shall ensure that its employees undergo yearly 'fitness to work' medical examination for assigned duties such as welding, blasting, painting and working in confined space.

- (d) SUBCONTRACTOR shall ensure that its employees have access to medical care under the Use of Standards Exposure of Chemical Hazardous to Health

(USECHH) Regulations, 2000 to undergo health surveillance by an Occupational Health Doctor (OHD), registered with DOSH Malaysia upon recommendation from the Chemical Health Risk Assessment conducted by the MMHE.

- (e) SUBCONTRACTOR shall at no cost to MMHE be responsible for the medical benefits of its own and sub-contractor's employees. SUBCONTRACTOR shall make necessary arrangements for medical consultation, treatment or hospitalization if and when necessary and will arrange suitable insurance coverage for such contingencies.
- (f) In case of emergencies, MMHE may provide necessary emergency arrangements, the cost of which shall be reimbursed by SUBCONTRACTOR.
- (g) SUBCONTRACTOR shall at its own expenses have a fully equipped first aid boxes on Site and shall appoint Person In Charge to be responsible of the boxes.
- (h) SUBCONTRACTOR shall ensure that its personnel and sub-contractor's personnel maintain a high standard of hygiene during execution of the work.
- (i) The SUBCONTRACTOR shall provide where necessary sufficient hygienic drinking fluids and toilet facilities to meet health and related regulatory requirements.

2.36 Health Risk Assessment

SUBCONTRACTOR shall identify and create an inventory of health hazards in the SUBCONTRACTOR's workplace, assess the risk to health associated with exposure to these agents, decide on the control measures required if any, remove or reduce the risk to health to a level 'as low as reasonably practicable' and consider any recovery measures needed to mitigate acute and/or chronic health effects should control measures fail.

2.37 Employees Welfare

- (a) SUBCONTRACTOR shall not subject its personnel to work more than 12 hours shift, resulting in work fatigue, which may reasonably foreseeable the cause of accident.
- (b) SUBCONTRACTOR is required to provide the basic amenities such as food, drinks, transportation and accommodation for its personnel working late shift.

2.38 Drugs and Alcohol

- (a) The use, sale, dispensing or possession of drugs, narcotics and alcoholic beverages is prohibited on the Sites and at any place where the work is performed.
- (b) SUBCONTRACTOR shall ensure that its personnel do not at any time, during the performance of the work, partake, bring onto the work site, or be under the influence of any alcoholic liquor, drug or other intoxicating substance. This prohibition shall also cover all legal or prescription drugs which may impair an employee's ability to perform his job safely. Employees who are found using or in possession of drugs at the work site shall be terminated. MMHE reserves the right to randomly require SUBCONTRACTOR's employee, to undergo drug and alcohol tests at any time. Drugs and alcohol tests shall be conducted immediately after an incident. SUBCONTRACTOR shall ensure that each and every person engaged by it or on its behalf to perform any element of the work (including sub-contractor) are advised on the local laws relating to the importation and/or possession of drugs.

2.39 Environmental Management

- (a) SUBCONTRACTOR shall establish and implement an environmental management plan that details the practices, procedures and control measures for effective management of environmental aspects, as required by the relevant authority and MMHE.
- (b) Environmental aspects include, but not limited to:
 - (i) Use of resources, e.g. chemicals, water, energy, fuel, etc.
 - (ii) Air emissions
 - (iii) Waste water discharges
 - (iv) Public nuisance, e.g. noise, odor, dust, etc.
 - (v) Wastes generation
- (c) SUBCONTRACTOR shall develop a waste management plan in accordance with any requirements from the MMHE and the relevant authorities. This plan shall inventorise all types of wastes and states their method of disposal and make available before the commencement of any work. This plan shall be regularly updated as conditions change. SUBCONTRACTOR shall handle, sort and dispose all types of wastes in conformance with the relevant procedures and requirements.
- (d) SUBCONTRACTOR shall ensure spill prevention is practiced and in place, where necessary. e.g. chemicals/fuel are stored in durable containers, secondary containment at the chemical/fuel storage area and during handling of chemicals/fuel, etc.

2.40 Emergency Response and Preparedness

- (a) SUBCONTRACTOR shall be aware of procedure and facilities provided for emergency response at Site, which as minimum, include the followings:
 - (i) Fire fighting
 - (ii) Fire prevention
 - (iii) First aid medical facilities
- (b) In the event of an emergency situation, SUBCONTRACTOR shall render all assistance to the emergency response team as requested.
- (c) Where SUBCONTRACTOR's employees are affected, SUBCONTRACTOR shall be responsible for maintaining contact with SUBCONTRACTOR's employees and their next of kin within 24 hours. SUBCONTRACTOR shall also maintain records of all its employees including names, ages, nationalities, local addresses, addresses in countries of origin, contact telephone numbers and details of next of kin.
- (d) SUBCONTRACTOR's employees shall response to any emergency drills by participating in drill program.

2.41 SUBCONTRACTOR Training Records

SUBCONTRACTOR shall provide adequate training to all its personnel to ensure that they have sufficient knowledge and skill to undertake the assigned tasks. SUBCONTRACTOR shall establish a document control system to maintain their training records.

2.42 HSE Performance Targets

In line with MMHE HSE policy, objectives and performance targets, CONTRACTOR shall set appropriate HSE objectives, develop and implement HSE programs to achieve the set performance targets.

2.43 SUBCONTRACTOR HSE Performance Reports

SUBCONTRACTOR shall compile and submit monthly HSE performance report to MMHE. SUBCONTRACTOR shall ensure all HSE performance reports and records are maintained and updated as and when required.

2.44 Incident Notification and Investigation

- (a) SUBCONTRACTOR shall develop an incident reporting and investigation system, which is compatible with MMHE requirements. Any incident involving MMHE, SUBCONTRACTOR's, sub-contractor's or any third party personnel, plant or equipment, shall be immediately reported to MMHE, irrespective of whether there is injury to personnel or damage to plant or equipment.
- (b) All incidents that resulted in or have the potential to cause serious injuries or property damage shall be suitably investigated by SUBCONTRACTOR and reported to MMHE. SUBCONTRACTOR shall keep a copy of the report at Site. SUBCONTRACTOR is required to investigate and report any major accident to the DOSH in accordance with the regulatory requirements. The investigation and report shall not preclude any similar investigations and reports required by the governmental authority in accordance with any relevant laws and regulations and may be handled concurrently with them.
- (c) Upon completion of the WORK under the SUBCONTRACT and/or on an annual basis, SUBCONTRACTOR shall prepare a close-out report of its HSE performance complete with Incidents statistics.

PART 3. CONSEQUENCE MANAGEMENT FOR HSE NON-COMPLIANCE

3.1 List of HSE Non-Compliance

3.1.1 CATEGORY 1 – MINOR

1. Failure to wear appropriate PPE in designated areas (MMHE Safety Rule #7)
2. Horseplay
3. Ignoring HSE signboard
4. Bringing unnecessary parcels and goods onboard vessels, engineering projects or any other similar structures
5. Failure to immediately report any incidents, including fires, near misses and spillage to his/her Supervisor
6. Failure to immediately report any unsafe equipment, unsafe conditions/acts to his/her Supervisor
7. Littering at workplace and in the yard premises
8. Riding on loads/forklift/truck deck/top of operating cab/mobile construction machineries
9. Using wrong/unsafe tools and equipment (excluding/other than lifting equipment)
10. Any unsafe acts/practices to be determined by QHSE/Security Department

11. Speeding in the yard (MMHE Safety Rule #10)
12. Carelessness and/or indifferent attitude affecting own and others safety
13. Leaving energized hot work tools onboard unattended
14. Jeopardizing safety by failure to report to Supervisor on any deviation from established work procedure
15. Using unsafe vehicles
16. Jeopardizing safety by leaving workplace without permission
17. Bringing/consuming foods at work site (vessels, fabrication sites, workshops)
18. Resting at undesignated area/worksite
19. Improper disposal, handling and storage of general wastes
20. Improper barricade/maintenance of blasting area
21. Open burning (except for training and with permission from QHSE)
22. Dirtying road with mud/rubbish
23. Using polystyrene packaging (for food and beverage)
24. Failure to provide / inadequate HSE signage
25. Failure to wear seat belt while driving (MMHE Safety Rule #10)
26. Using mobile phone/walkie-talkie while driving/riding (MMHE Safety Rule #9)
27. Parking of vehicle at non-parking area (MMHE Safety Rule #10)
28. Failure to park vehicle in reverse position (MMHE Safety Rule #10)
29. Fail to comply with MMHE Equipment Pass requirement

3.1.2

CATEGORY 2 (Section I) – MAJOR

1. Carrying and possessing cigarettes, cigars, pipes, lighters and matches on board vessels, engineering projects or any other similar structures (MMHE Safety Rule #8)
2. Tampering with electrical/hot work appliances and fittings
3. Tampering/Misuse of Safety and Fire Fighting equipment
4. Indiscriminate throwing off flammable material
5. Improper use of air, oxygen and acetylene or any types of compressed gases
6. Dismantling/Damaging HSE signage
7. Smoking while walking in MMHE premises (except office compound and designated area) (MMHE Safety Rule #8)
8. Concealing documents, evidence or other material relevant to any accident, near miss or fire investigations
9. Interfering/Impeding emergency operations
10. Failure to attend structured HSE Training, HSE Briefing, HSE Talk or any other similar HSE Program without valid reason
11. Improper/Absence of labeling & relabeling/repackaging of chemicals

12. Failure to provide Material Safety Data Sheet (MSDS) for chemicals at Site
13. Improper storage of chemicals
14. Performing critical work trade without MMHE Operator/Tradesman Pass
15. Horseplay that may result to serious injury
16. Improper disposal, handling and storage of scheduled wastes
17. Discharge of pollutants to water and land (chemicals/scheduled wastes/oil/sludge/sewage/effluent)
18. Performing indiscriminate blasting operation

3.1.3

CATEGORY 2 (Section II) – MAJOR

1. Failure to adhere to Permit To Work system (MMHE Safety Rule #1)
2. Not complying with instructions on HSE matters
3. Failure to observe fire precautions (MMHE Safety Rule #1)
4. Failure to comply with hot work tools control system (MMHE Safety Rule #1)
5. Using wrong/unsafe tools and equipment for lifting activity (MMHE Safety Rule #6)
6. Ignoring Prohibition/Warning signage
7. Smoking in 'No Smoking' area (MMHE Safety Rule #8)
8. Smoking on board vessels/engineering projects (MMHE Safety Rule #8)
9. Threatening and/or assaulting any authorized MMHE employees enforcing HSE Rules and Regulations
10. Instigating others to violate HSE Rules and Regulations

3.1.4

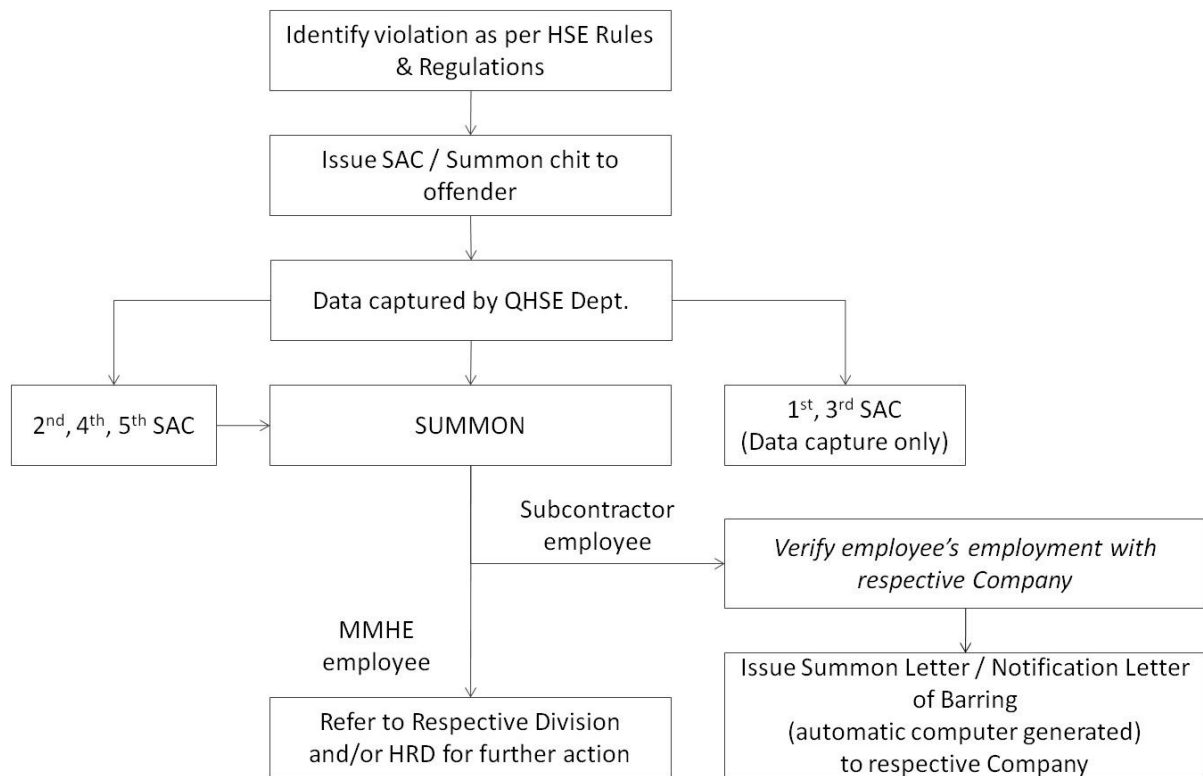
CATEGORY 2 (Section III) – MAJOR

Possessing and/or consuming illicit drugs/alcohol (MMHE Safety Rule #8)

3.2 Category of Non-Compliance

Category of Non-Compliance	SUBCONTRACTOR's Personnel	Remark
CATEGORY I	1 st offence - Verbal warning 2 nd offence - RM50 3 rd offence - Verbal warning 4 th offence - RM75 5 th offence - Subjected under the Misconduct of Category 2 (Section I)	
CATEGORY (Section I) II	1 st offence - RM150 2 nd offence - Suspension up to 1 month from entering MMHE facility 3 rd offence - Suspension up to 6 months from entering MMHE facility	
CATEGORY (Section II) II	1 st offence - Suspension up to 1 month from entering MMHE facility 2 nd offence - Suspension up to 6 months from entering MMHE facility 3 rd offence - Suspension up to 1 year from entering MMHE facility	
CATEGORY (Section III) II	1 st offence - Permanent suspension from entering MMHE facility	

3.3 Process Flow on Consequence Management for HSE Non-Compliance



DRAFT COPY

ATTACHMENT 1: PPE STANDARDS AND TECHNICAL SPECIFICATIONS

(Details refer to **WI/05**: Personal Protective Equipment (PPE) Work Instruction)

NO.	ITEM	DESCRIPTION
1.	Safety Glasses	<ul style="list-style-type: none"> • Clear polycarbonate lenses • Provided with side shields • Standards: <ol style="list-style-type: none"> a. BS 2092 b. AS 1337 c. ANSI Z 87.1
2.	Safety Shoes/Boots	<ul style="list-style-type: none"> • Safety features: <ol style="list-style-type: none"> a. Steel toe cap (capable of withstanding an impact energy of 200 joules) b. Non-slip sole c. Non-conductive d. Non-sparking / without metal sole • Wearing of Rubber safety shoes/boots: <ol style="list-style-type: none"> a. Tank cleaning activities b. Civil construction excavation activities c. Any other circumstances where work is required to be performed in wet and muddy conditions • Standards: <ol style="list-style-type: none"> a. EN 345 b. AS 2210 c. ANSI Z 41.1
3.	Coverall	<ul style="list-style-type: none"> • One piece coverall, long sleeves • Color: Red • Wearable features: Sweat absorbent for humid tropical condition
4.	Hand Protection	<ul style="list-style-type: none"> • Manual handling <ol style="list-style-type: none"> a. Semi-leather gloves • Chemical pickling, degreasing, painting <ol style="list-style-type: none"> a. Chemical resistance gloves such as nitrile and neoprene coated working gloves as specified in MSDS • Handling of medical wastes, injured victims and biological and pathogenic wastes <ol style="list-style-type: none"> a. Surgical gloves
5.	Hearing Protection	<ul style="list-style-type: none"> • Ear plugs • Ear muff attached on safety helmet • Headband hearing protector • Hearing protection devices shall be selected from the list under JKJ IH 127/12/1
6.	Head Protection	<ul style="list-style-type: none"> • Type: Tuffmaster • Peak type, chemical resistance complete with hot press branding, adjustable headband, clip and elastic chin straps • Standards: <ol style="list-style-type: none"> a. MS 183 b. SS 98 c. AS 1801 d. ANSI Z 89.1 e. BS 5240

7.	Eye/Face Protection	<ul style="list-style-type: none"> • Chemical handling activities <ul style="list-style-type: none"> a. Chemical splash goggles • Grinding, chipping activities <ul style="list-style-type: none"> a. High impact resistance face shield • Welding activities <ul style="list-style-type: none"> a. Welding shade with lenses between shade number 8 – 14 depending on the type of welding performed • Standards: <ul style="list-style-type: none"> a. BS 2092 b. AS 1337 c. ANSI Z 87.1
8.	Safety Harness	<ul style="list-style-type: none"> • The harness shall be constructed of shock-absorbing material e.g. webbing manufactured from synthetic fiber. Similar, safety lanyards shall also be of synthetic fibers e.g. polyamide, nylon or polyester • To reduce possible injuries to the users from decelerating forces, safety harnesses, the leg and shoulder load-carrying straps at least 38mm (1.5 inches) wide • Each safety harness shall be provided with one or more D-rings suitably positioned for attachment to two lanyards. They shall withstand a 5000lb (2300kg) force without breaking or cracking • Buckles should be of a universal-friction type. Harnesses with load-bearing single-insertion type buckles are not permitted. Snap hooks for lanyards shall be of the self-closing type and shall be designed so that disengagement of each of the latches requires a deliberate action • All harnesses and safety lanyards shall carry test certificates or certificates of compliance with the standards to which they are manufactured. Minimum diameter size for each lanyard shall not less than 16mm diameter and minimum length shall not less than 1200mm length • Two types of safety harnesses are recommended and they are classified according to their intended use: <ul style="list-style-type: none"> a. Chest Harness – Class II b. Body Harness – Class III • Standards: AS 1891, BS 1397, MS 707, LS 954-lanyard • Each safety harness and lanyard shall be inspected by MMHE Competent Person (Advanced Scaffolding Inspector) at every 3 months. Only valid safety harness and lanyard are allowed to use at worksite
9.	Personal Floatation Devices – Life Jacket	<ul style="list-style-type: none"> • It is intended as an aid to prevent person from drowning in the water • Standards: <ul style="list-style-type: none"> a. EN 396 b. MS 2096
10.	Respiratory Protection	<ul style="list-style-type: none"> • Respiratory protection devices shall be selected under JKJ IH 127/12/2-1 • Provision of type of respiratory protection shall be according to the specific activities performed.