कोचीन शिपयार्ड लिमिटेड
(भारत सरकार की श्रेणी-1 मिनिरत्न कंपनी, पोत परिवहन मंत्रालय)

COCHIN SHIPYARD LIMITED
(A Government of India Category-1 Miniratna Company, Ministry of Shipping)

सीएसएल-मुंबई पोत मरम्मत यूनिट, ह्यूजेस ड्राई डॉक (एचडीडी) ऑफिस बिल्डिंग, ग्रीन गेट, बलार्ड एस्टेट, शूरजी वल्लभदास रोड, फोर्ट, मुंबई - 400 001 , महाराष्ट्र, भारत
CSL-Mumbai Ship Repair Unit, Hughes Dry Dock (HDD) Office Building, Green Gate, Ballard Estate, Shoorji Vallabhdas Road, Fort, Mumbai - 400 001, Maharashtra, India

CORRIGENDUM No.1 dated 21.05.2021

Tender Ref No. MP1/ Robotic Scanning / ICGS Samudra Paheredar /CMSRU

Sub: Revised Scope of Work

Dear Sirs,

Subsequent to the above tender enquiry MP1/ Robotic Scanning / ICGS Samudra Paheredar /CMSRU dtd. 15 May 2021, CMSRU hereby revised scope of work

Following are the schedules:

Last date & Time of Tender submission	25 May 2021, 15.00 Hrs.
Tender opening date & Time (Technical bid)	25 May 2021, 15.30 Hrs.

All other terms & conditions of the tender remain unchanged.

For COCHIN SHIPYARD LIMITED
MUMBAI SHIP REPAIR UNIT

LOGANATHAN M
उप. प्रबंधक
Deputy Manager
सीएसएल-मुंबई पोत मरम्मत यूनिट
CSL-Mumbai Ship Repair Unit
मुंबई / Mumbai-400 001

TENDER ENQUIRY

Dt. 15.05.2021

Tender Ref. No:
MP1/ Robotic Scanning/ICGS Samudra Paheredar/CMSRU

Dear Sir,

Sealed Tenders in **Two Bid**, super scribing the Enquiry Number & Last date for receipt of Quotations on the envelope, are invited in two separate covers as 'Part I Techno Commercial' & 'Part II Price' for Robotic Scanning works for the vessel ICGS Samudra Paheredar at CMSRU, which will undergo refit at **CSL MSRU (Cochin Shipyard Ltd- Mumbai Ship Repair Unit), Mumbai** shortly.

1 The offers as above should reach the undersigned on or before the last date and time shown. Tenders should be addressed to "The General Manager (CMSRU), Cochin Shipyard Ltd-Mumbai Ship Repair Unit, Mumbai Port Trust, Mumbai-400001".

2. **Techno - Commercial offers can also be made by e-mail, with price bid duly Locked with password, before 15.00 hrs (IST) on 25 May 2021, if delivery of sealed offers cannot be ensured at CSL on the due date**.

3. The offer shall indicate payment terms and other terms and conditions.

4. Quotation should be valid for a period of 90 days.

6. Quotation can be submitted by email as a password protected document (price part only) to the following email address.

loganathan.m@cochinshipyard.in,

niranjan.kumar@cochinshipyard.in,

jayan.kt@cochinshipyard.in

OR

In a sealed envelope addressed to "The General Manager (CMSRU), Cochin Shipyard Ltd-Mumbai Ship Repair Unit, Mumbai Port Trust, Mumbai-400001".

Last Date & Time of Receipt of Tender: 25 May 2021 at 15.00 Hrs IST.

Tender Opening date & time: 25 May 2021 at 15.30 Hrs IST.

NOTE: Amendment if any will be notified on CSL/Govt. Website. The bidders are requested to keep themselves informed of the development by visiting CSL website www.cochinshipyard.com and the CPP portal www.eprocure.gov.in regularly. Such amendments shall be binding upon them.

Enclosures: -

1. Special Instruction for Two Bid Systems
2. Scope of work
3. Price bid format
4. Rules for engaging workmen at CMSRU.
5. CMSRU HSE booklet
6. Specific Terms & conditions
7. General Terms & conditions
8. Compliance matrix
9. HSE Guidelines.

Signed copy of following documents shall be submitted along with *unpriced Price bid format clearly indicating quoted/not quoted* against each job scope as per CSL P- bid format (Un priced bid no need to protect with password, if send as soft copy in E mail).

1. Scope of work
2. Price bid format
3. Rules for engaging workmen at CMSRU.
4. Specific Terms & conditions
5. General Terms & conditions
6. Compliance matrix
7. HSE Guidelines.

Price bid duly signed and sealed by the authorized person need to be protected with password and shall be separately attached/enclosed in the mail. Offer submitted in single bid will not be considered.

In case of technical queries, please contact Shri.Ray Mathews (DM-CMSRU) (Mob No. 8129821303)

Yours faithfully,

General Manager (CMSRU)

Enclosure 1

CSL-MUMBAI SHIP REPAIR UNIT (CMSRU)

Mumbai

SPECIAL INSTRUCTION FOR TWO BID SYSTEMS

1. **MODE OF SUBMISSION OF TENDERS**

Tenders should be submitted in two separate sealed covers super scribed in capital letters as **PART-I "TECHNO-COMMERCIAL" & PART-II "PRICE"** indicating the tender number, due date and name & address of the tenderer.

2. **TECHNO-COMMERCIAL PART SHOULD CONTAIN FOLLOWING DETAILS**:-

I. Drawings & Technical Literature, if any

II. Other conditions, if any

III. Signed and stamped copy of Job Scope (Encl 2), Rules for engaging contractor's workmen (Encl 4), Other terms & Conditions (Encl 6), CSL/CMSRU Terms and Conditions (Encl 7) & Compliance Matrix (Encl 8)

IV. Deviation list, if any

V. **Price bid without price clearly indicating quoted/ not quoted against each line item/ DL.**

3. **PRICE PART SHOULD CONTAIN FOLLOWING DETAILS:-**

a. Price against each work.

b. Taxes & duties as applicable shall be indicated.

4. CSL/CMSRU reserves the right to alter, modify the scope of supply at their discretion and consistent with the Navy Policy as applicable to the contract from time to time.

5. The Techno-commercial part alone will be opened initially on the due date and time of tender. The price part will be opened only after evaluation of the Techno commercial Part. Firms will be intimated the date of opening of the price part, whose Techno-commercial bid is acceptable, in due course.

6. The tenderer shall ensure that their Indian Agent is not representing any other suppliers for the same Tender. In other words, Indian Agents are not permitted to represent more than one firm for a particular Tender.

7. Deviations, if any, in the offer submitted from that of the tender enquiry in any form, should be clearly furnished in a separate document titled as "List of Deviations".

8. Details of optional items, if any, should be indicated under separate heading in the technical bid and the respective price details should be given in the price bid.

9. After submission of quotation / price bid opening, no unsolicited correspondence will be entertained.

10. Clarifications, either technical or commercial, should be submitted to points specially asked for only. The opportunity so given should not be used for correcting/changing amending the data/conditions already submitted with the tender.

11. Price should be quoted separately for each item. Combining of figures against more than one item and ambiguous clauses will lead to rejection of the bid.

12. Offers should be clear and unambiguous. Incomplete/ambiguous offers are likely to be rejected.

13. The bidder shall submit a signed & sealed copy of the tender document including Encl 2, 4, 6, 7 & 8 along with their bid as token of acceptance of terms & Conditions.

14. An Integrity Pact as per CSL/CMSRU format is to be signed and submitted later (if necessary).

15. The quantity projected in the scope of work is estimated. There may be upward/downward variations in actual quantity.

Deputy General Manager (Ship Repair Materials)

Rules for engaging contractor's workmen in CSL-MSRU

I) The following labour statutory compliance measures should be followed by contractors working in CSL Mumbai Ship Repair Unit;

1. If the contractor is engaging 10 or above contract workmen, their firm must have independent establishment registration under EPF.
2. If the contractor is engaging 10 or above contract workmen, their firm must have independent establishment registration under ESI.
3. If the contractor is engaging less than 10 contract workmen and they are exempted under ESI/EPF, their workmen should be covered under Employee Compensation policy.
4. The wage payment for workers should be disbursed through bank payment only and contractor have to submit monthly Challan for ESI Remittance ,EPF Remittance and bank statement of wage disbursement along with their monthly bills.
5. If the contractor is engaging 20 or above contract workmen, they should take the Labour Licence under Contract Labour Contract Act.

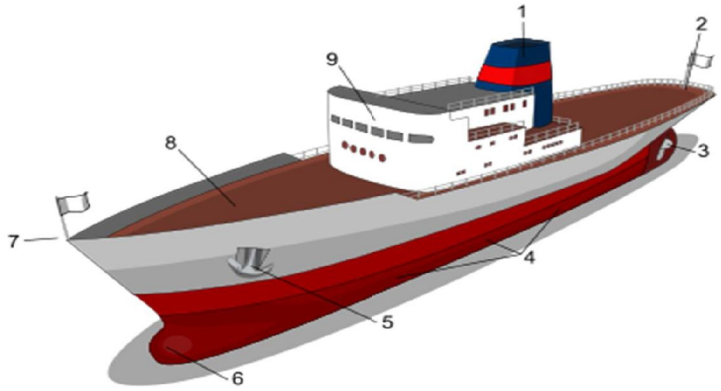
II) The contractor is solely responsible for complying ESI & EPF rules for contract workmen engaged by them for the work.

III) It is mandatory to submit police clearance from Mumbai Police station to issue gate entry pass. Hence all the workmen belong to other states shall have to take police clearance from their respective home station to submit application form for obtaining police clearance from Mumbai Police Station.

IV) Employee/worker deputed for the work shall not be over 58 Years of age.

Seal & Sign of Authorized Person

BASIC SHIP TERMINOLGY



1. Funnel

2. Stern

3. Propeller

4. Port Side [Right side "Starboard side"]

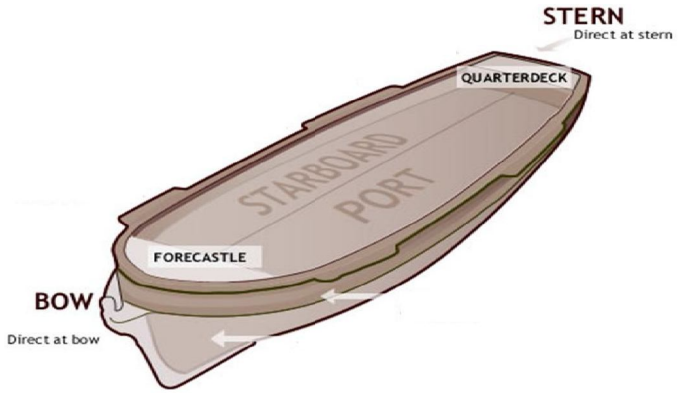
5. Anchor

6. Bulbous Bow

7. Bow

8. Deck

9. Super Structure



Cochin Shipyard Limited

Mumbai Ship Repair Unit

QHSE Department

HSE Hand book

Rev A00 - Jan-2019

Emergency Telephone Numbers

022-??????

WHILE MAKE AN EMERGENCY CALL!!!

Clearly State;

- What type of emergency (eg. Ambulance, fire/rescue etc)
- Where is the emergency (eg: Repair dock – BY 90 – tank no. 2(p))
- Guide the emergency crew to the location
- Responsible person or supervisor must be with victim

INDEX

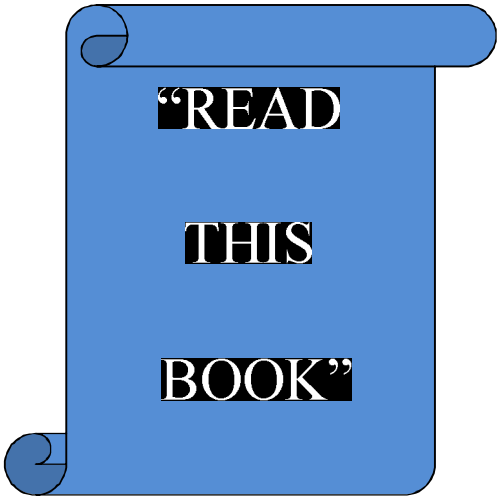
1. INTRODUCTION

Cochin Shipyard Limited – Mumbai Ship Repair Unit (CSL-MSRU) places utmost importance on the safety of its employees on rolls, Partners, subcontractors & their workmen and Owners/ Classification societies and will do its best to provide and maintain a safe and healthy working environment.

The responsibility for safety does not end with the safety personnel. Every employee in the yard from the Managerial Grade down to the Workman level has a definite role to play their work is safe.

This Safety hand book has been compiled by QHSE Department for the use of all personnel working or visiting inside the yard.

This book does not replace the detailed requirements, safety rules in vogue practiced by CSL-MSRU, for further clarification on HSE requirements, QHSE team will guide you to work safely.



2. QHSE POLICY

COCHIN SHIPYARD LIMITED

QUALITY, HEALTH, SAFETY AND ENVIRONMENTAL POLICY

We are committed to provide ship building, ship repair services and training of marine engineers to the total satisfaction of customers. We undertake these in healthy & safe working conditions, an eco friendly environment and ensure continual improvement of management systems performance.

We endeavour to achieve the above by:-

Meeting or exceeding customer requirements.
Assuring quality of the products and services.
Developing competent marine engineers.
Preventing occupational ill health and injuries.
Ensuring safe work sites.
Conserving natural resources.
Preventing / Minimising air, water and land pollution.
Handling and disposal of hazardous wastes safely.
Complying with statutory & regulatory and other requirements.
Developing skills and motivating employees.

March 2016

Chairman & Managing Director

Issue & Revision No. A0 2

3. HSE MANAGEMENT SYSTEM IN CSL-MSRU

3.1 QHSE Statement

The long-term business success of CSL-MSRU depends on our ability to continuously its performance in providing assured quality of the ship repair services. Enhanced the occupational health of the employees, Environment & safety, by following best practices within the organization and sustained environmental protection for the benefit of the society.

3.2 Health & Safety

CSL-MSRU strives to conduct all its activities in such a way as to prevent injuries and ill health to our employees, contractors and visitors. CSL-MSRU record and investigate all the incidents occurring in the work place in order to identify the cause and take necessary measures within the ship yard. CSL-MSRU achieving this by identifying the high risk hazards, eliminating or if not at least reducing the risk involved to acceptable level. CSL-MSRU take necessary measures to educating all people involved in ship repair activities on health and safety practices within the work place and off the job safely.

3.3 Environment

CSL-MSRU commitment to the Mother Nature is demonstrated through the ongoing effort to reduce the adverse impact on the environment and reinforcing the positive contribution. This is achieved by identifying the significant environmental aspects related to its activities and products and developing programs and processes to reduce or control them with an aim of protecting the environment.

4. SAFETY INDUCTION

All entrants to CSL-MSRU are made aware about basic CSL-MSRU requirements with respect to Health, Safety , Environment & Emergency Response. This training is imparted to all newly inducted CSL-MSRU Employee/ Trainees/ Contractors workmen, who will be engaged in ship repair/ maintenance / construction activities on installations. The individual passes will be issued only

after successful completion the HSE induction training programme.

5. WORK AREAS IN CSL-MSRU

a. Dry dock – 305 X 30 X 15 meters
b. Berth- 5,6,7 & 8 (Indira Dock)
c. Shops

6. RESTRICTED ENTRY AREAS IN CSL-MSRU

Due to potential hazards, entry restricted to authorized persons in the following areas.

a. Substations
b. Flammable gas storage area
c. Barricade the locations with warnings as and when required.

7. GENERAL GUIDELINES

1) Every individual is responsible and obliged to "Suraka Keliye Rukem" for the non compliance of 12 Silent Safety Rules published by CSL and this is to be performed as per the guidelines mentioned towards an interdependent safety culture.
2) Smoking is strictly prohibited
3) Unauthorized use of cameras and mobile phones in CSL-MSRU is forbidden.
4) Parking of vehicle is only in approved parking locations.
5) Priority is for Material Movement and private vehicles shall make way for material movement.
6) The use or possession or influence of non-prescription drugs, alcohol and the abuse of substances is strictly prohibited in CSL-MSRU.
7) Speed Limit of vehicle in the yard is 20km/Hr
8) Fishing is not permitted in yard
9) Everyone should observe and obey regulatory signs.
10) Use of mobile phones is strictly prohibited while at work and driving including while cycling.
11) Horse play is not entertained in CSL-MSRU. (Example: Direct compressed air or gas on any person)
12) Hiring or bringing the materials / equipments / machinery in CSL-MSRU premises to be followed as per the guidelines, Refer entry management system for Hiring or bringing the materials / equipments / machinery (Annexure 4 - Entry Checklist for equipment and toos)

8. HSE GUIDELINES

1) Usage of Safety Helmet with chin strap, safety shoe and cotton working dress are compulsory at CSL-MSRU work site, in addition suitable PPEs which are job specific are to be used. (refer CSL- PPE'S Matrix)

2) Risk assessments of non routine works are to be done before the work is started and control measures identified before commencement of work. These measures are to be approved by CSL-MSRU officer In charge and confirm by QHSE Dept. These control measures are to be communicated to the workers involved through tool box talks. These works to be performed through Job Safety Analysis (JSA)(Refer Annexure 2)

3) Workers and supervisors engaged in the works shall be competent.

4) Supervisor In charge is to Brief the hazards and preventive measure related to the work to be carried out during daily tool box talks.

5) People are to be engaged in work activities preferable in group only. In case a person has to work alone, the same shall be known to at least two persons who are working nearby.

6) Using Paint tin, CO_2 welding cable bobbin and oil drums as working platform is strictly prohibited.

7) Thinner is not to be store in beverage bottles

8) Ensure necessary state of mind (eg: lack of proper sleep) by having rest at periodic intervals during extended working hours especially during night time.

9) Adequate precautions should be taken during welding or gas cutting against hazards such as electric shocks, burns, fumes, explosion and arc eyes.
10) Adequate ventilation should be provided while working in confined spaces.
13) Check and ensure the adjacent areas compartments are free from flammable hazards and suitable protections are taken before commencing hot work.
14) Never start hot work - cutting the bottom/side shell of ship from outside to inside.
15) During hot work at elevated positions, precautions should be taken to prevent sparks or hot metal slag falling on to the people or material below / nearby and suitable barricade to be done at the ground.
16) Industrial Oxygen is not to be used for ventilation purpose.
17) Simultaneous operations of Hot work and painting are not to be carried out in the same area.
18) Ensure that no hot work should be carried out in the presence of hydrocarbon fumes.
19) All electrical equipments including AC welding machine should be properly earthed.
20) Ensure that ELCB/RCCB is fitted on all Welding Machines and extension boards.
21) Ensure cables have sufficient current carrying capacity that is used for all electrical equipments/tools.
22) Voltage Reducing Devices (VRD) (Safety relay) must be fitted on AC welding Machines.
23) Never Bypass Safety Relay on AC welding machines
24) Electrical extension switch boards are in metallic construction with ELCB/RCCB & and individual MCB. Only industrial type plug and socket to be used.
25) Only authorized persons are allowed to operate any machine/equipment / Switch boards. Unauthorized operation strictly prohibited. work on yard switch boards only allowed to CSL-MSRU electrical team.
26) Never tamper with machine guards.
27) Ensured that all portable equipments, welding transformers/rectifiers must be switched off after use.
28) 230 V hand lamps are not permitted in the yard. Use 110 V hand lamps in open area and 24 V hand lamps are to be uses in confined spaces.
29) 24 V Flame proof lamps shall be used inside tanks where while there was hydrocarbon presence and during painting in confined spaces.
30) Users are to daily inspect welding cables, cutting hoses and hand tools must be used in the yard.
31) All the temporary electrical connection including connection of welding sets, distribution box etc shall be made with the approval of yard electrical safety officer
32) Excavated materials should be put away from the edge of the excavated trench to avoid slopping of the excavated materials into the trench.
33) Never enter into tanks without permit. Refer Confined space entry procedure.
34) People working in tanks or pits must acquaint with the hazard present there and supervisor should advise his employees of the hazards present and precautions that are to be taken.
35) Open manholes and places people are liable to fall, those areas must be protected by strong barricade with intermediate railings. Man hole covers should be replaced promptly when work is suspended.
36) Jumping from moving vehicle is prohibited. They should wait until the vehicle stop before attempting to enter or leave.
37) Any dangerous situation affects the safety of an employee or his fellow employees shall be immediately brought to the notice of site supervisor or reported to CSL-MSRU QHSE team.
38) Standing under suspended loads is dangerous and is avoided.
39) Compressed air should not be used to clean dust in the clothing.
40) Any kind of Gas cylinders (empty/full) should be secured in upright position and away from direct sunlight.
41) Air hoses, welding cables, fuel hoses and electric cables should not be allowed to lie across walkways and area they should be suspended from overhead hooks.
42) Inflammable liquids must be handled in cans or containers meant for storing it and are to be stored in space having good ventilation. All such containers must be clearly labeled and warnings exhibited visibly.

43) Material Handling Equipments to crane tracks through the authorized route only.
44) If a threat to any person's life is observed, anybody can clear the threat and wait for authorized rescue persons for further actions. Rescue operations should be done by authorized persons only.
45) Everybody should be responsible for housekeeping at their work site.
46) Avoid activity/action that leads to air/water/soil pollution.
47) All the pressure line joints must be connected with whiplash/whip sock arrestor.
48) Gas management for cutting operations to be complied as the procedure(Annexure 3– Gas management Procedure)

9. RESPONSIBILITIES OF CONTRACTORS

1) The Contractor before starting any work in the CSL-MSRU premises will be issued with these CSL-MSRU HSE guidelines and firm is expected to give a declaration that he receives one copy of the CSL-MSRU HSE guidelines and will comply with laid therein.
2) The contractor should convey the HSE guidelines to his workers and make them aware through tool box talks.
3) A responsible safety Incharge is to be designated by the firm for the activities. The details of the safety Incharge shall be communicated to QHSE team. He shall take a lead to ensure safe work environment for their work sites.
4) CSL-MSRU reserves its right it suspend work in the event of the contractor not complying with the HSE guide lines with regarding to HSE practices for which no claim of any kind will be entertained.
5) To ensure the safe conduct of safety operation a representative of the contractor should maintain appropriate contract with the CSL-MSRU officer-in-charge of the work as may be necessary to acquaint himself with any changed conditions of other matters relating to the HSE performance.
6) The contractor shall ensure that all his employees understand their obligations and they follow all CSL-MSRU HSE rules.
7) It is the responsibility of the sub- contractor firm to provide their employees with all the necessary PPE'S.
8) The contractor is also responsible for controlling the behavior of his personnel and must control their movement to and from the work site.
9) The HSE plan of Contractor is detailed in the procedure. (Annexure -5 - Refer HSE Plan of Contractor)
10) For further clarifications on HSE matters, Contact CSL-HSE Officer.

10.REPORTING OF INCIDENTS

All **injury incidents** to employees/ trainees/sub-contractors & their workmen/visitors/Ship staff occurring inside CSL-MSRU premises during the duty/after duty hours should be reported by supervisor to project manager.
CSL-MSRU personal injury reporting form (CSL / SMS / S&F/ Form 02) to be initiated by the officer in charge of the area and reach to QHSE dept within 24 hrs.

Format of HSE Observations (near miss, property damage, suggestions, violation etc) other than personnel injury incidents shall be available at HSE site cabins/offices.

11.PERMIT TO WORK SYSTEMS

The following activities must not commence unless obtaining issued work permits. (Refer PTW procedure annexure)
The type of work permits are:

1) ON BOARD SHIP
   a) Hot work (Oxy Acetylene cutting/Welding On Board Ships)
   b) Painting / Buffing in Confined spaces (Brush/Spray paintings in Tanks/Confined Spaces/other compartments)
   c) Electrical Shut down (Works on Electrical installation/Equipments)

2) INSTALLATIONS
   a) Work at Height/fragile roof
   b) Excavation/Trenches Opening (any)
   c) Excavation/Fuel or electrical trench opening)

3) TYPES OF WORK THAT REQUIRE A PTW (STATUTORY)

a) Radiography (NDT tests using Radioactive materials, Any Expose of radio Active materials)
b) Electrical Shut Down (Works on Electrical installations/closed proximity of distribution system)

4) JSA FOR NON ROUTING WORKS
a) Chemical cleaning – pipe line, tanks, equipment's and spaces etc.
b) STP cleaning
c) Tank testing by filling air(APT)
d) Pressure testing of AC lines and plants
e) Charging of Refrigerents
f) Puff filling
g) Use of liquid nitrogen
h) Simultaneous Operations (SIMOPS)
i) Fumigation
j) Any Other works directed by the yard QHSE team

(Refer Annexure 2 -JSA)

12.PERSONAL PROTECTIVE EQUIPMENTS

Employees are responsible to wear appropriate PPE'S associated with hazards they are exposed to. All PPE'S must comply with approved Indian or international standards e.g: ISI, BS, DIN, ANSI or CE

Basic PPE'S requirement at CSL-MSRU Site.
1) Safety Helmet
2) Safety Shoes
3) Cotton Working dress
4) Safety Glasses or face shield or goggles.(appropriate to work)
5) Hand gloves appropriate to work should be worn
6) While welding PPE's like apron, gauntlet, leg guard, face shield should be worn
7) While grinding helmet with face shield should be worn
8) For further information refer PPE'S Matrix

13.HOUSE KEEPING

Good housekeeping is an important part of HSE management system; it is the responsibility of all personnel to maintain the highest possible standard of housekeeping in their work area.

This can be maintained by:
a. Ensuring that the work place is tidy before commencing the task and at the end of a work shift or completion of the task.
b. Ensure obstruction free access to all work places.
c. All the waste generated during project taken back out from CSL-MSRU premises.

Items shall be stored in such a way that it is easily identifiable and traceable.
d. Suitable control measures shall be ensured while storing of flammable materials and chemicals.
e. The MSDS (Material Safety Data Sheet) of each chemical are to be displayed and known to all working there. Appropriate first aid and fire fighting measure are to be kept stand by in case of spillage on people handling it or during any fire.

14.WELDING & CUTTING

All welding and cutting operations must be carried out by qualified personnel while working inside the yard. While working onboard the vessel the work should be in accordance with the conditions specified in the work permit. The principal hazards associated with welding and cutting operations are

- Fire
- Explosions
- Burns
- Eye injury
- Respiratory disease.

Additional hazards which may result from arc welding are electric shock, ultra violet radiation.

Whenever, welding or cutting operations are being carried out, flammable materials should be removed from the area, where ever possible, and covered with a wetted fire retardant cloth should be placed in case the flammable materials cannot be removed.

14.1 Electric Arc welding

Check equipment thoroughly, all welding cables shall be fully insulated and periodically check for cuts that could accidently "short" when in contact with an earthed section of any structure. Do not lay cables in water.

When connecting cable lengths together, only approved and insulated connecters shall be used. All cables and connectors must be of adequate current carrying capacity to perform the task.

Avoid lengthy cables if possible and lay between wooden blocks, or cover or hang the cables on hooks or stands to prevent tripping hazard. Only electrode holders specifically designated and fully insulated, and rated to handle the maximum current required by the task, should be used.

The arc produces Ultra-violet (UV) radiation. Exposure of UV radiation leads to reddening of the skin and irritation. The eyes are very sensitive to UV radiation, the effect varying from temporary to permanent damage of the retina.

Ensure VRDs (Safety Relay) & ELCB/RCCB are fitted on the AC welding transformers

All welders must wear the appropriate protective clothing, Gauntlet type welding gloves, leather aprons, leggings and correct shaded filter glass to suit the type of work and also all welding cable must be tested every 6 months.

14.2 Cutting Operations

Only proprietary fittings should be used on flexible gas line. Hoses must be fitted to the equipment using crimped fasting by double ear end clip or crimping and **not jubilee clips** which is prohibited by CSL-MSRU. The color code for Oxygen and acetylene hoses are black and red color Respectively. While checking for leaks, only "Soapy water" to be used. Only Acetylene and Oxygen gases are used for cutting operations.

While working with the gas cylinders flash back arrestors must be fitted at regulator and torch end, and non-return valve must be fitted between the hose and cutting equipment while working with the gas cylinders. Suitable ranged and Calibrated pressure gauges shall be fitted on at gas regulator area to check the cylinder and hose side pressure.

All cutting equipment must be removed from the vessels or enclosed spaces to open spaces/weather deck when not in use for a prolonged period of time ie, during breaks or end

of the shift. This will prevent the build-up of gas, if there are any minute leaks.

If the atmosphere becomes oxygen enriched due to leakage, the work area must be purged with fresh air and all clothing/flammable materials must be well ventilated to prevent the risk of spontaneous combustion. Gas hoses shall be disconnected from the manifold/cylinder for the stoppage of work on the day and to be locked at manifold or cylinder side.
All the gas hose must be tested every 6 months. Only oxygen and acetylene gas's are allowed inside the CSL-MSRU premises.

14.3 Gas Cylinders

Before use, all gas cylinders must be fixed and secured in an upright position, and placed at a safe distance from any heat source.
When the cylinders are not in use, the valves must be closed. Prior to fitting the regulator, the valve should be opened slightly to blow away any dust or grit from the valve.
Oxygen regulator valves or fittings should be free of Oil and grease to prevent spontaneous combustion in the case of any oxygen leakage.
Cylinders should be kept and moved in purpose built trolleys, when attempting to move cylinders not mounted on trolleys, the regulators and hose must be detached.
If cylinders are to be lifted by crane, they should be secured in a special carrier. On no account they should be lifted by holding the valve as they are not designed to take the stress and no attempt must be made to lift them with chains, ropes or slings as there are chances for it to slip.
Oxygen cylinders and fuel gas cylinders must be stored well apart, at least 6 meters in open space, to prevent an explosive mixture forming from any leakage.
All fuel gases (Acetylene) whether full or empty, must be stored upright and not in a lying position they should be stored separately.

The cylinders should be shielded from direct sun light, or other heat source, to avoid the buildup of excess internal pressure. Valid certificates of cylinders shall be produced while bringing the cylinders to be yard.

15 SURFACE PREPARATION

Surface preparation includes activities such as buffing, grinding etc. The control measures for these activities are discussed in the power tools section in this book.

Surface preparation is also done by blasting using iron shots, copper slag or high pressured water (hydro blasting). Suitable blasting suites, hoods with coolant tubes shall be used while doing such operation. Barricade with warnings to be erected while blasting operations are being carried out.

16 PAINTING

Smoking or any hot working (welding/gas cutting etc) in the vicinity of painting activity is prohibited. Electrical equipments and fittings in the vicinity should be flame proof. For maintaining the air current, blowers should be used at one end and exhaust blowers at the other end.

While painting inside confined spaces, workers should wear air lines respirators with close fitting rubber masks and the equipments should be of the type that the user himself is able to regulate the air pressure.

A worker inside the confined space should be aided by one helper who could be contacted in case of an emergency through a suitable arrangement.

17 WORKING AT HEIGHTS

A suitable means of access and egress must be provided for all working places which cannot be reached from ground level. All work places that are 2 meters or above and does not have a proper working platform, scaffolding are to be made available. All platform structures / scaffolding shall be only erected, altered or dismantled by the authorized scaffolder. The certified scaffolding will have a green tag near the access and if it is not certified, red tag is placed

near the access. Certification of scaffolding done by QHSE Team. Scaffolding requirements are

Red Tag

Green tag

The key points to be observed when erecting scaffolding are.

- The ground must be firm enough to carry the weight of the scaffold, and the load the scaffolding will be carrying.
- There should not be any gaps in the working platform
- Hand rails with mid rails at 1 meter and half meter height should be ensured for the working platform
- Access ladders shall be provided to reach the working platform. Access ladders are to be provided zig zag manner if the height is more than 2 meter.
- Toe boards must be provided on the working platform.
- Scaffolding materials must be inspected by CSL-MSRU QHSE team and it shall be made of MS.
- Secondary Platform must be place if the scaffolding height more than 6 meters.
- Scaffolding validity is 15 days from the issue date after 15 days re inspection must be requires.

17.1 Full body Harness

When it is necessary to work in temporary work platform areas where it is liable to fall a full body harness shall be worn. The full body harness should be anchored on a rigid structure, and length of the lanyard should be minimized in such a way that the fall height will be minimal. Anchoring hook shall be of scaffold hook.

18 WORKING OVER WATER

Where work takes place over or near water, the following precautions shall be ensured.

- Suitable hand rails shall be ensured to prevent fall of persons into water also full body harness must be worn
- Safety net shall be used wherever practicable.
- Buoyancy aids shall be made available near the work area.

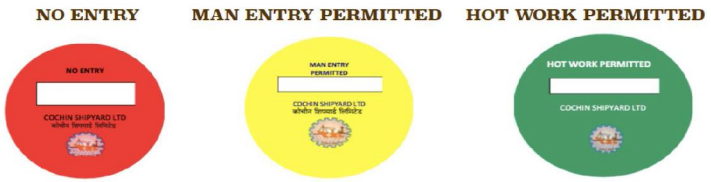
19 CONFINED SPACE

The term "Confined spaces" covers a great variety of workplaces which have limited access and inadequate ventilation. Confined spaces are therefore potentially dangerous places to work because workers may get trapped in hazardous concentration of toxic or flammable gases or vapors. Daily inspection of confined spaces to be done before commencing the operation on the day or shift and details are available at access of the space. Continuous monitoring of the space is required if situation warrants. (Refer CSL Confined space entry procedure for details)

Confined space is also liable to become deficient in oxygen. Very often the dangerous atmosphere can occur in confined space as a result of the work being done, for instance, welding, painting, and flame-cutting or the use of adhesives and solvents.

The following guidelines to follow while entering into confined spaces.

- Ensure adequate ventilation prior to entry and constant circulation while personnel are inside. Flameproof blowers shall be used where containing hydrocarbons in the spaces.
- Use only 24V hand lamps while working in confined spaces.
- Man Entry and Hot work certificates to be obtained from Petroleum and Safety Organization (PESO) while entry or do hot work in fuel tanks. (Refer CSL Confined space entry procdure)



20 HAND TOOLS AND POWER TOOLS

All personnel using hand or power tools shall be made aware of any dangers which may arise during their use. Adequate supervision must be provided to ensure that the use of such tools is correct and safely performed.

20.1 Hand tools

Hand tools are among the simplest of our work aids and the hazards associated with them are simple and well understood. Because of this simplicity, the safety precautions associated with them are often ignored or forgotten, to the users subsequent regret.

The main cause of injury is the general misuse of tools, the use of unsuitable or poorly maintained tool and improper storage. Injuries can of course be caused by breakage, it is therefore essential that only tools manufactured from the best materials by reputable tool companies are used.
Misuse of tools causes many problems, the use of screwdrivers as chisels, spanners to hammer nails, and pliers to screw up or unscrew nuts are prime examples of this common misuse.

When working at elevated location, all tools should be placed in a tool box to prevent loose tools being dropped from the heights. Where there is a risk of injury from flying objects such as striking two hard surfaces together, e.g. hammer, chisel, punch or similar articles, better to wear an eye protection.

20.1.1Hammer

The faces of hammers should be kept clean and free from grease, and be of sound condition (not pitter or broken edged) and in good shape (Not mushroomed)
Wooden shafts must be of the correct size and securely fixed to the hammer head with fitting wedges – They must be kept from oil and grease and undamaged. Crack or split shafts must not be used.

20.1.2Chisels and punches

There are several types of cold chisels and punches. These must be of good quality materials, properly maintained and inspected, especially for mushrooming of head. All chisels and punches should be dressed frequently to maintain a safe profile.

Cutting edges should be kept sharp to permit accurate working and to avoid the hazards arising from unnecessary hammer striking.

20.1.3Files

A file must never be used without a correct fitting handle; this is to prevent the tang from causing injury to the hand.
Oil must never be applied to files; they must never be struck by other tools as they are brittle and will shatter. To maintain files when clogged with filings clean out the teeth with a file card or fine wire brush.

20.1.4Screw Drivers

Screwdrivers are probably the most common and abused of all the hand tools. When using a screwdriver, make sure that the blade fits the slot in the screw properly. Too large or too small a blade will damage the screw, and not work efficiently. Screw driver blades must be kept square and have a patter to the end.
The shanks are not designed to withstand twisting strain from pliers or grips, which are often mistakenly applied to obtain additional leverage on a stubborn screw. Never expose the blade to excessive heat as this alters the temper of the steel making it too soft or too brittle for this job.
Do not use screwdrivers as scrapers, chisels or levers and the handles may split if hammered. Serious puncture wounds can be sustained as the result of carrying screwdrivers in the pocket of clothing or coveralls.

20.1.5Hacksaws

When using hacksaws, select the correct blades for the work to be carried out. Thick materials require coarse blades to allow chippings to escape. Thin hard materials require a fine blade. Always ensure that at least three consecutive teeth are in contact with the work.
The blade should always be correctly tensioned in the frame, taut but not over tensioned. Use a steady, forward cutting stroke with just sufficient pressure to cut through the material.
After use when the hacksaw is to be stored, the tension on the blade should be released, and re-tensioned before future use.

20.1.6 Spanners and wrenches

Always select a spanner which exactly fits the nut or bolt head, never use packing pieces to make the spanner fit as they may slip, causing injury, and also damage the hexagonal contour of the nut or bolt head.
Open-ended spanners should not be tilted. Ring spanners are probably the strongest if they can be used in a particular situation, less chance of slipping.
Pieces of pipe or similar device must not be placed over the end of spanners as extensions to increase the torque.
When using adjustable wrenches, fit tightly against the faces of the nut or bolt head and apply the torque in the direction of the fixed jaw to prevent the spanner from opening.
Spanners and wrenches should not be exposed to excessive heat, or be ground in order to alter their shape as this may ruin the temper of the working parts.
Periodically inspect all spanners and wrenches for any signs of damage or wear. All worn or damaged tools should be discarded or where necessary, moving parts replaced.

20.2 Powered Portable Tools

The efficient and safe use of all powered tools can come only through proper maintenance and from adequate supervision. The power from this type of equipment is usually supplied from Compressed air or electricity.

20.2.1 Pneumatic Tools

All compressed air hose must have standard hose couplings, never use jubilee clips or similar fittings. Tools required clean air and correct lubrication for smooth functioning of the same.

20.2.2 Electrical Tools

All electrical hand tools shall be of double insulated and fiber body type. Portable electric power tools must not be used if any defect is suspected or any damage apparent. Repair and routine maintenance shall be carried out by trained and qualified electricians.
Only chuck keys of the correct type shall be used to operate chucks. Operators shall ensure that the key is removed from the chuck before operating the equipment and ideally, clipped to the cable to avoid improvisation.

20.2.3 Powdered Disc Grinders

Powered disc grinders can be air or electrically driven. General operation applies equally to both types. The security of the disc and condition must be checked before attempting to use. Care must be taken to avoid knocking or sudden impact of the disc to prevent damage and possible disintegration of the disc. The RPM of the grinding machine should be lower than the RPM of the grinding disk
Disc that are chipped, out of true or out of adjustment must never be used. Apply the disc to the work piece and do not use excessive pressure. Allow the disc to come a stop before laying the grinder down. Impact protection must be worn.
Sparks from the disc may ignite flammable materials, or cause injury to personnel in the area.

20.2.4Compressed Air

Extreme caution must be used when using compressed air, as it is delivered at high pressure. Iron dust and rust particles may be present in compressed air. If it enters the body, it can rupture internal organs and cause serious injury and even death.
Do not attempt to clean off coveralls or clothing as it can force harmful particles through the skin.

21 WORKING ON MACHINE TOOLS AND MACHINERIES

While working with Machine tools and machineries the following precautions should be taken.

1. Authorized persons should be allowed to use a machine tools and machineries
2. Suitable eye & hand protections shall be worn
3. Ensure sufficient illumination at the point of operation
4. In wood planing machines, Push sticks and push blocks should be used for guiding the wood to the planing machines
5. Stand at a safe distance from the machineries to protect the operator from kick backs, flying materials, moving machinery parts etc.
6. Switch off the machine after use
7. Ensure machinery guards in place
8. Ensure lubrication oil or coolants are not spillover near and on the machines.

22 HANDLING ELECTRICITY

The main hazards in electrical works are electrocution, burns, fire and explosion.

1. All wires must be treated as live wires until it is positively known that they are dead
2. No repairs are to be made to electrical equipments by anyone except qualified authorized electricians.
3. Never use an electric light extension cord unless it has an approved insulated handle and standard lamp guard.
4. All portable equipments must be grounded
5. Always wear rubber gloves when working around circuits of 110 volts or above
6. Do not overload or overuse circuits
7. Before starting any repair works or resuming the supply after the repair on electrical installations, Clearance from proper authority should be taken.

8. Before resuming the power supply it should be ensured that the grounding of the line or equipment at the work spot has been removed and all men are off the line or equipment
9. If any one comes in contact with live wires or cable and becomes unable to release his grip on the wires, do not attempt to pull him off with bare hands. Shut off the current and protect the hands with rubber gloves or if they are not available, use thick fold of dry clothes to cover hands before attempting to release the victim. If wires are directly on top of the victim use a dry stalk to remove them

23 MANUAL HANDLING

Manual handling is a process where the person is prime source of power in moving material and equipment. It includes lifting, pilling, pushing, carrying or moving**.**
Correct manual lifting and handling can help prevent strains and backaches**.** Once your back has been injured, that weakness can remain with you for the rest of your life**.**

To avoid injury, follow these guidelines:

Asses the weight of the load, get help if it is beyond your capacity use mechanical or hydraulic equipment.

Size up the job make sure you have a clear path way to where the load is going. Look for nails or splitters and wear gloves where appropriate.

Adopt the correct stance stand close to the object with your feet apart, giving a balanced position. One foot advance of the other, pointing in the direction you intend to move.

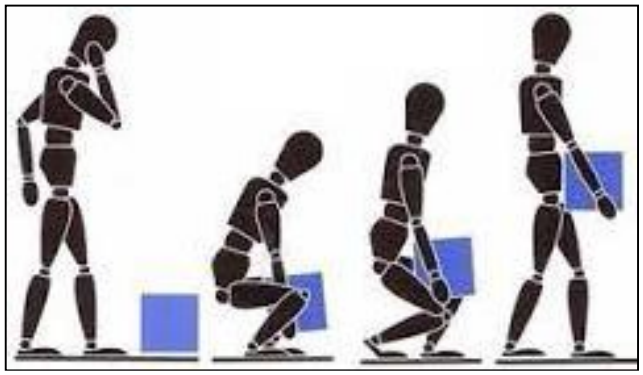
Bend your knees to a crouch position, keeping your chin tucked in and your back straight (not necessarily vertical)

Take a firm grip with the palm and roots of the fingers and thumb, keeping your arms as close to the body as possible. Keep your shoulders level and face the direction of travel.

Lift with your leg muscles, not back muscles. Carry out the lifting movements smoothly, do not jerk or twits.

Utilize body weight to create momentum and forward with the load.

Use the reverse procedure when setting down the load.



24 LIFTING OPERATIONS

Lifting machineries such as cranes, winches hoists and other lifting tools and tackles include (wire rope sling, web sling, D Shackles, eye bolts chain block etc.) are widely being used in CSL-MSRU.

Lifting must, by its very nature, be regarded as a hazardous operation. The improper usage and inadequate maintenance of lifting tools and machineries may lead to serious consequence to life and property.

Operational Guide lines are:

1. Only authorized, competent persons are allowed to operate cranes.

2. Crane operators must only take instruction from designated rigger.
3. At no time should the crane be left unattended, even for short periods, unless all loads have been removed, the power off and brakes are to be applied.
4. Crane and Transporter (Commeto) within CSL-MSRU area must be accompanied by a rigger or banks men, they will guide the movements safely.
5. Do not use rigging and slinging unless you have been trained and instructed to do so.
6. Use correct lifting hooks – fitted with safety latches or shaped to prevent accidental displacement of slings.
7. Position the lifting hook over the load as to prevent the load swinging when it is raised.
8. Do not tie a knot in a chain to make it shorter, or attempt to drag if from under a load.
9. Check wire ropes for kinks, signs of wear and broken wires.
10. All lifting equipment must have valid test certificates issued by competent person.
11. All lifting equipment must be test once in a year.

Wire rope – Lifting chart

Wire Rope Diameter		Single leg Sling	Two legged Sling with different included Angles				
Inch	m.m		0°	30°	40°	90°	120°
		Kg.	Kg.	Kg.	Kg	Kg	Kg
5/16	8	530	1060	1040	930	760	530
5/8	9	770	1540	1490	1340	1090	770
	10	900	1800	1750	570	1280	900
//16	11	1030	2060	2010	1800	1470	1030
	12	1180	2360	2300	2060	1680	1180
1/2	13	1350	2700	2590	2320	1900	1350
9/16	14	1720	3440	3330	2990	2420	1720
	15	1920	3840	3720	3340	2720	1920
5/8	16	2120	4240	4110	3690	3010	2120
11/16	17	2570	5140	4980	4470	3650	2570
	18	2820	5640	5470	4900	4000	2820
3/4	19	3050	6100	5920	5310	4330	3050
13/16	21	3570	7140	6920	6210	5070	3570
7/8	22	4100	8200	7950	7140	5820	4100
	23	4400	8800	8540	7650	6240	4400
15/16	24	4740	9480	9200	8250	6720	4740
1	25	5420	10840	10520	9440	7700	5420
	26	5850	11700	11340	10180	8310	5850
1.1/16	27	6270	12540	12170	10940	8910	6270
1.1/8	29	6770	13540	13140	11800	9610	6770
	30	7790	15540	15100	13540	11050	7790
1.1/4	32	8380	16760	16260	14600	11900	8380
	33	9230	18460	17900	16080	13100	9230
	34	9650	19300	18720	16800	13700	9650
1.3/8	35	10170	20340	19720	17700	14420	10170
	36	10730	21460	20860	18700	15250	10730
	37	11430	22860	22200	19960	16230	11430
1.1/2	38	12100	24200	23440	21000	17200	12100
	39	12780	25560	24800	22200	18150	12780
	40	13470	26940	26160	23440	19100	13470
1.5/8	41	14220	28440	27600	24800	20200	14220
	42	14980	29960	29000	26100	21300	14980
	43	15750	31500	30600	27400	22400	15750
1.3/4	44	16520	33040	32000	28800	23500	16520
	46	17620	35240	34200	30600	25000	17620
1.7/8	48	18970	37940	36800	33000	26950	18970
2	51	21520	43040	41700	37400	30600	21520
	53	22870	45740	44400	39800	32500	22870
2.1/8	54	24400	48800	47300	42500	34700	24400
2.1/4	57	27270	54540	52800	47300	38700	27270
	59	28280	56560	54800	49300	40200	28280
2.3/8	61	30320	60640	58800	52800	43200	30320
	63	32520	65040	63100	56600	46200	32520
2.1/2	64	33700	67400	65300	58700	47800	33700
	65	34700	69400	67300	60400	49300	34700
2.5/8	67	37080	74160	71800	64500	52600	37080
	69	39450	78900	76500	68700	56000	39450
2.3/4	70	40820	81640	79200	71000	58000	40820
	71	42000	84000	81500	73100	59600	42000
2.7/8	73	44700	89400	86600	77700	63500	44700
	75	47250	94500	91600	82200	67200	47250
3	76	48600	97200	94200	84500	69000	48600
	77	49800	99600	96600	86700	70700	49800
3.1/8	79	52700	105400	102500	91800	74800	52700
	81	54870	109740	106500	95500	78000	54870
3.1/4	83	56900	113800	110500	99000	80800	56900

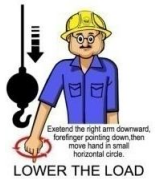
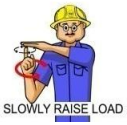
Web sling colour chart

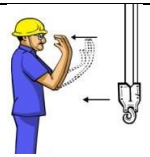
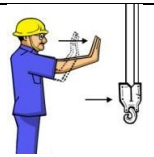
Color	WLL (Straight lift)
Violet	1 ton
Green	2 tons
Yellow	3 tons
Grey	4 tons
Red	5 tons
Brown	6 tons
Blue	8 tons
Orange	10 tons or above

Web sling lifting chart

			SWL IN KG WITH ONE WEBBING SLING					SWL IN KG WITH TWO WEBBING SLINGS			
Lifting method / WLL			straight	choke	basket, inclination angle §			angle of inclination §			
					up to §=7°	up to §=7°-45°	from-to §=45°-60°	straight up to §=45°	choke up to §=45°	straight from-to §=45°-60°	choke from-to §=45°-60°
Art. No.		Factor	1.0	0.8	2.0	1.4	1.0	1.4	1.12	1.0	0.8
HFS01	1000kg	violet	1000	800	2000	1400	1000	1400	1120	1000	800
HFS02	2000kg	green	2000	1600	4000	2800	2000	2800	2240	2000	1600
HFS03	3000kg	yellow	3000	2400	6000	4200	3000	4200	3360	3000	2400
HFS04	4000kg	grey	4000	3200	8000	5600	4000	5600	4480	4000	3200
HFS05	5000kg	red	5000	4000	10000	7000	5000	7000	5600	5000	4000
HFS06	6000kg	brown	6000	4800	12000	8400	6000	8400	6720	6000	4800
HFS08	8000kg	blue	8000	6400	16000	11200	8000	11200	8960	8000	6400
HFS010	10000kg	Orange	10000	8000	20000	14000	10000	14000	11200	10000	8000

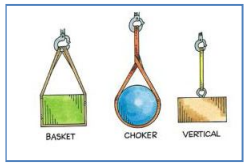
25. BASIC RIGGING SIGNALS, TACKLES AND METHODS

COMMON			
Hoist up		Hoist lower	
Hoist up– slow		Hoist lower - slow	
Stop – motion is finished		DOG everything – pause the motion	
Emergency stop -			

EOT cranes			
Long travel - Right		Long travel – Left	
Cross travel – Towards operator		Cross travel – Away from operator	

Bow and D shackle

Wire rope slings with thimble



Slinging Methods

Web sling

26.DOCKING & UNDOCKING

Docking and undocking of the ship is one of the major activities in the yard. The following precautions are to be taken.

1. Docking and Undocking operations should be done only with the guidance of the dock Master, pilots or authorized person from CSL-MSRU.
2. Pre requisite checklist to be filled cleared by CSL-MSRU project manager.
3. Tugs or suitable supports should be ensured
4. Tide level, List and Trim of the vessel level, docking plan and water currents to be taken care of while planning the docking & undocking
5. Gangways shall be placed in a safe manner after the positioning the vessel
6. Good condition of mooring ropes shall be ensured
7. Suitable floating life vest to be worn if any chance of fall into water bodies.
8. Docking and undocking checklist must me follow for each project.

27.SLIPS, TRIPS AND FALLS

A large portion of injuries at work are caused by slips, trips and falls. Whether on the same level or from height, fall can occur in all kinds of work places and under a range of different conditions.

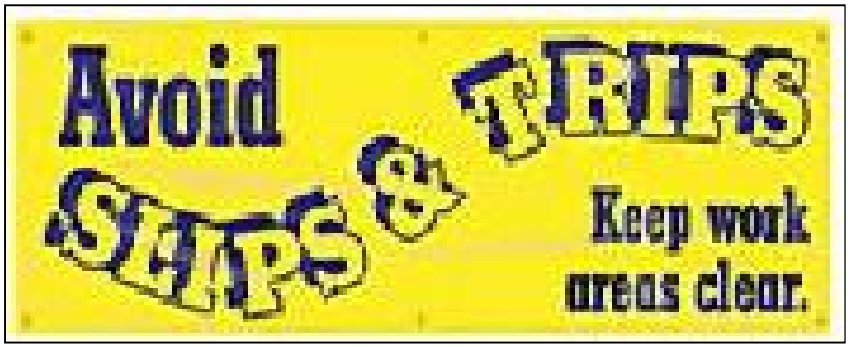
Some of the common reasons for Slips, Trips and fall are:

1. Poor flooring
2. Unsuitable foot wear
3. Slippery surfaces
4. Obstruction in walk ways
5. Poor lighting or restricted vision

6. Undue care and attention**.**

The biggest contribution you can make in preventing such accidents is by keeping your work-area clean, tidy and free from obstructions.
Also:

1. Use proper routes and walkways. Avoid short cuts
2. Make sure that any temporary opening in walkways is secularly fenced off. On completion of work, replace grating and covers securely.
3. Report to your immediate supervisor whether there are damaged or obstructions on floor surfaces, lack of handrails and fencing as well as inadequate illuminated areas
4. Correct use of ladders – firm level surface, secured at the top and extended beyond the step-off point or adequate separate handhold.



28.FIRE

a. Basic chemistry of fire

Any fire, once it starts, will continue to burn as long as there is something to burn and oxygen is present. There must be reasons for a fire to start and the way it burns. There are reasons for certain substances to be more or less flammable than the others.

b. The nature of fire(combustion)

The combination of a substance with oxygen is called an oxidation process. It is a chemical process. Energy is given off during this process, usually in the form of heat. The oxidation process in case of a fire or combustion is rapid. The burning substance combines with oxygen at a very fast and high rate. Production of energy in the form, of heat and light is rapid, so we can feel the heat and see the light as flames.

c. Elements of fire

The essential requirements of a sustainable fire (combustion) are the presence of three elements, i.e. FUEL, HEAT and supply of free OXYGEN, usually in air (formation of fire triangle).

28.1 Fire Prevention

Prevention is the best form of defense. Fires can be prevented by following some simple rules.

1. **Don't** let rubbish or items accumulate in one area, especially under stairs.
2. **Don't** overload electrical outlet sockets
3. **Don't** use make shift wiring extensions
4. Hot works carried out onboard vessel only through Permit To Work.
5. Lighting of incense and candle is not allowed inside your room.
6. **Don't** store any flammable items inside the room unless it is meant for.
7. **Don't** hang clothes to electrical equipments such as fans, AC and in the corridors. Always keep Entry/exit clear.
8. Suitably designed equipment and its installation (intrinsic safety).
9. Inspection and maintenance of equipment and electric circuits.
10. Maintaining and properly using portable equipment and flexible cables.
11. Adopting safe working practices and procedures

28.2 Discovery of fire

On discovering of fire, your prompt action could save lives:

- Warn all personal in the area by fire, fire, fire
- Use first aid fire fighting appliances in that area.
- If it is not possible, call CSL-MSRU fire service.

Remember: - Firefighting equipment must not be tampered with and must be kept clear of all all obstruction

29.GENERAL PERSONAL FACTORS LEAD AN INCIDENT

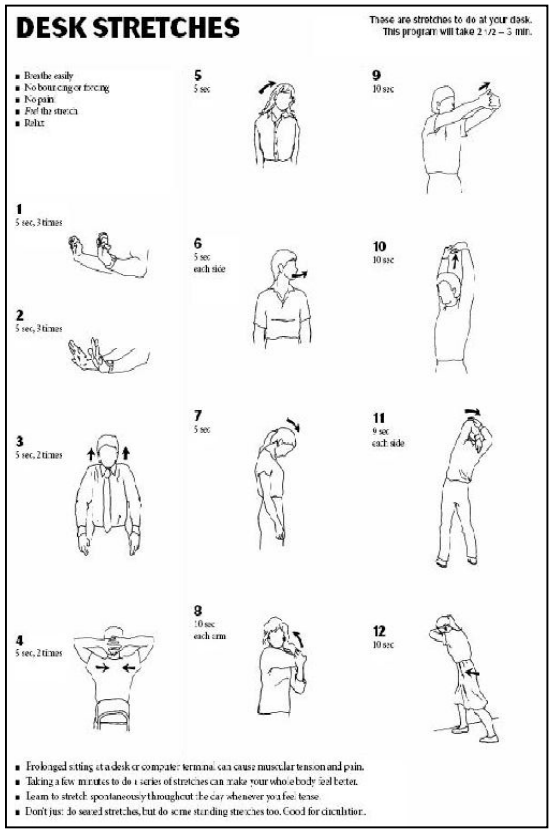
The following personal factors are to be taken care of and they should be more vigilant while on duty, otherwise it may lead to incidents.

1. Ensure sound sleep.
2. Eat sufficient breakfast.
3. Avoid over eating
4. Sickness suffered by any family member or near & dear ones(Frustration)
5. Acute financial crisis
6. Quarrel with others (Emotional disturbance)
7. Over confidence
8. Influence of medications
9. Fatigue due to lack of rest

30.OFFICE SAFETY

1. Don't stand and talk in front of closed doors which may open suddenly.
2. Walk cautiously around blind corners
3. Sit squarely on office chairs, and not on the edge of them.
4. Running at any time in an office may result in injury from slipping, tripping or collision. Avoid running in offices.
5. Walk slowly and cautiously up and down stairs. Use hand rail where possible.
6. The gummed strips on envelopes should not be moistened with tongue.
7. Office employees wearing high heeled shoes shall exercise extra caution to prevent falls.
8. Don't use lift in case of fire.
9. While lift break down, shout for help or make call to CSL-MSRU Emergency number for help

Desk stretch exercise for continuous use of computers



31.WASTE MANAGEMENT

A waste is a material which is discarded or intended to be discarded.

Waste identification and classification

Type of Wastes are classified in CSL-MSRU activities

1. Waste Oil/Oil Sludge
2. Oil soaked cotton waste
3. Used copper slag
4. Empty paint drums
5. Zinc Anodes
6. Used Batteries
7. Electronic Waste
8. Steel Scrap
9. Industrial Waste
10. Cut Cable

Waste disposal policy

1. No dumping of items in the yard premises and same shall be taken out from the yard as per the QHSE requirement.
2. Respected vendor /agency is the responsible to dispose the waste according to state statutory requirements.

32.OCCUPATIONAL HEALTH

Occupational health deals with man (both physically and mentally) in relation to his work and work environment.
The employees are exposed to various levels of health hazards, life style diseases and the various physical and chemical hazards. Proper awareness about the health hazards is a required for an employee to lead a healthy life

The various measures to be taken for reducing Health hazards

are:

1. Employees who are involved in handling hazardous chemical, gases and other substances should be made aware about its health hazards and the precautions to be taken in handling these hazards.
2. The MSDS of the chemical being handled should be made available to the workers.
3. Statutory Periodical health checkups should be done by the company
4. Non statutory health check up should be done at least once in two years in order to detect Life style diseases such as High Cholesterol, Diabetics, Blood pressure, allergies to any chemical or substances etc
5. Employees should maintain all his medical records and should be made available in case of an emergency.
6. Stress of employees that is either job related or caused by various personal factors also can lead to accidents and subject the victim to various diseases.

33.FIRST AID

First aid is the immediate emergency care / treatment given to the victim of an accident or sudden illness, till medical aid is available.

Aims of first aid

a) To preserve / save life
b) To prevent further injury & worsening of casualty's condition
c) To promote recovery

Ten Commandments for first aiders

1. reach the accident spot quickly
2. be calm and speedy
3. ensure safety of the place
4. look for life threatening conditions first
5. give FA in the order of priority
6. reassure the casualty if conscious
7. clear the crowd
8. do not leave the casualty alone
9. arrange for safe transport
10. do not attempt too much / do no harm

Look for condition of the victim in the following order

1. is the victim conscious
2. is the victim breathing
3. is there severe bleeding
4. is the victim in shock
5. is the victim in pain

33.1. Control of bleeding

1. Apply direct pressure over the wound
2. Cover wound with sterile dressing and bandage firmly
3. Raise the injured part above level of heart
4. Apply pressure over pressure points
5. Immobilize the injured part
6. Look for signs of shock
7. Send to hospital in lying down position

33.2 Fracture

Suspect fracture when there is tenderness, swelling, deformity, abnormal movements etc.

1. Control any bleeding and cover any wounds
2. Do not move the casualty unless life is endangered
3. Immobilize the injured area as well as the joints above and below using suitable splints
4. Call for ambulance to send to hospital

33.3 Burns

1. If clothing on fire—stop, drop and roll
2. Cool the burnt area by holding under cold running water for at least 10 minutes
3. Do not apply ointments, oils or any other substance
4. Cover the wound with sterile non-sticky dressing
5. Call for ambulance

33.4 Eye injuries

1. Removal of foreign body should not be attempted
2. Do not apply ointment or oil
3. Apply sterile pad and loose bandage
4. Send to hospital

33. 5 Chemical burns of the eye

1. Immediate washing of the eye with clean water continuously for at least 20 minutes
2. Apply sterile pad and bandage
3. Send to hospital.

33.6. Suffocation

1. Remove the casualty from the site of accident to safe area to get fresh air
2. Clear the airway
3. Restore breathing by artificial respiration
4. Send to hospital

33.7 Electric shock

1. do not touch the casualty while he is still in contact with live source
2. switch off the power immediately
3. do not attempt first aid until the contact has been broken
4. check response and breathing
5. give cardiopulmonary resuscitation(CPR) if the casualty is unconscious and is not breathing

33.8 Unconsciousness

1. Check response
2. If no response look for breathing
3. Start giving CPR if unresponsive and is not breathing
4. If breathing is normal , keep the casualty in recovery position till he gets medical attention

33.9 Chest pain

1. If casualty is conscious, keep him in half sitting position and advise to take rest
2. If unconscious, check D.R.A.B.C (Dangerous, Response, Airway, Breathing and Circulation) and start giving CPR if necessary
   Call for ambulance and continue CPR till he gets medical help or show signs of life.

33. 10 Cardiopulmonary Resuscitation (CPR)

CPR is the emergency first aid procedure done when the casualty is unconscious and not breathing.

CPR maintains flow of oxygenated blood to the brain and the heart, thereby delay tissue damage, so that more definite treatment will be effective

If you see a motionless person, follow the steps below

1. Assess the area for any safety hazards before proceeding
2. Check the response by shaking the shoulders and calling loudly
3. If there is no response, open the airway by head tilt and chin lift
4. Check for breathing by looking rise and fall of chest wall for 5 to 10 seconds
5. If there is no breathing start giving CPR

CPR consists of artificial circulation & artificial respiration given at regular sequence. CPR is effect only if performed within 4-5minutes of the stoppage of blood flow. CPR sequence of steps is now

C-A-B

C- Chest compression

A- Airway

B- Breathing

Chest compression

1. Place the heel of one hand at the centre of lower part of chest and place the other hand on top of the first.
2. Begin chest compression – push hard and push fast
3. The rate of compression should be at least 100 per minute.
4. Depress the chest at least 2 inches(5 cms) and allow full recoil of chest wall before next compression
5. Give 30 compressions at one stretch
6.

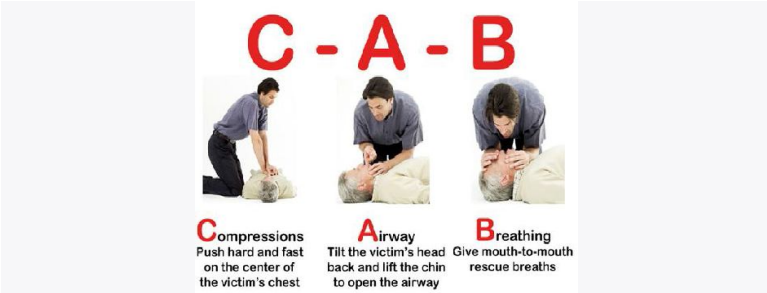
Air way opening

1. Open airway by head tilt and chin lift
2. Check breathing by watching rise and fall of chest wall for 5 to 10 seconds.

Breathing

1. If the casualty is not breathing, give two rescue breaths in two seconds.
2. Continue CPR by giving 30 chest compressions followed by 2 rescue breaths

Continue CPR until there are signs of life or until emergency medical personnel take over



34.COLOUR CODING WITH TYPES OF SERVICE MANIFOLDS/PIPE LINES & ELECTRICAL DISTRIBUTION BOXES

CONSEQUENCE MANAGEMENT

The purpose of consequent Management is to provide a fair and consistent approach to dealing with every ones conduct, behavior and/or performance falls below acceptable standards or regulatory requirements. It will apply whose conduct, behavior and/or performance falls below acceptable standards or regulatory requirements will be subject to corrective action.

Everyone is expected to conduct themselves in a manner which conforms to HSE standards of workplace behavior and conduct. When a violation of an established standard occurs, cases will be investigated thoroughly and disciplinary action will be administered on the merits of each case.

35. SAFETY REVIEW MEETING

Safety review meeting conducted every month to address any deficiencies and improvement opportunities in the system are being discussed in a constructive manner and necessary measures needed to improve it.

This meeting will be chaired by unit head, execution and QHSE team will be part of the meeting. Secretary of the meeting is a from QHSE team.

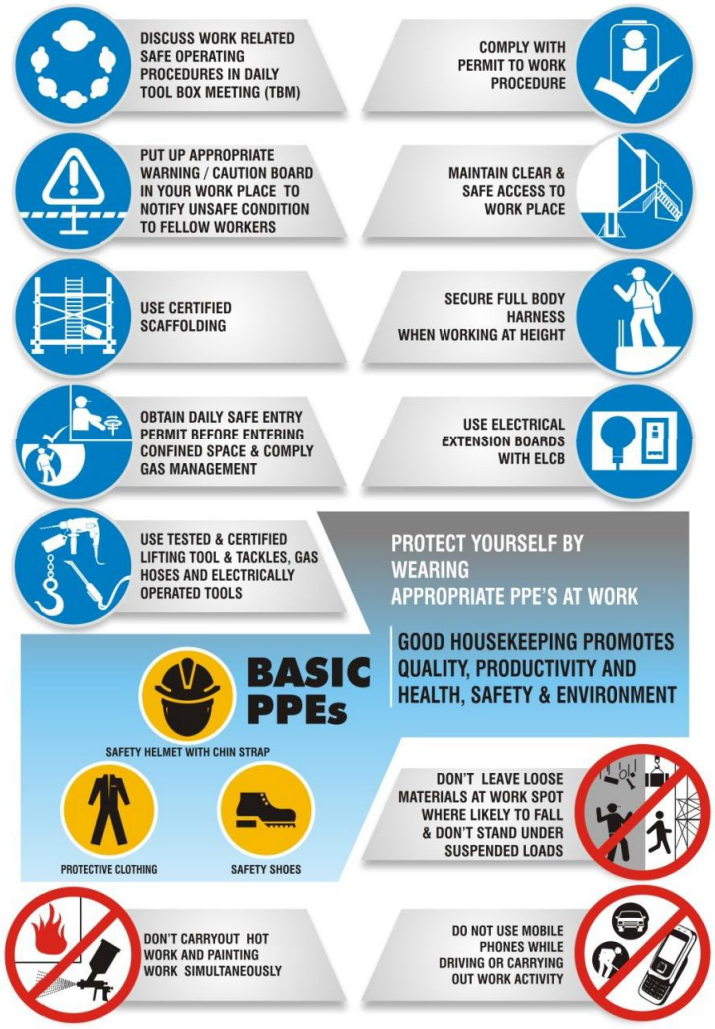
36.STEPS TO REDUCE ENVIRONMENTAL IMPACTS

- Continual Improvisation of the system to reduce the use of natural resource (Eg: Electricity, water, paper) in CSL-MSRU.
- Continual Improvisation of the system to reduce the pollution resource (Eg: air, water and soil) in CSL-MSRU.
- Promotion of use of environment friendly materials in CSL-MSRU.
- Action to reduce any leakage of water in CSL-MSRU. If water leakage is observed in your area, report immediately.
- Avoid Improvised connections and use of standard leak proof couplings for getting water.
- Electrical equipments to be switched off when it is not use.
- Promote the use of one side paper in offices.
- Avoid dumping oil or paint sludge directly in sea water.
- Paint drums, oil drums, blasting materials etc. are to the taken away from the dock floor before flooding the dock and area will be cleaned.

कोचीन शिपयार्ड लिमिटेड
(भारत सरकार का श्रेणी 1 मिनि रत्न कंपनी, पोत परिवहन मंत्रालय)

COCHIN SHIPYARD LIMITED
(A Government of India Category-1 Miniratna Company, Ministry of Shipping)

12 SALIENT SAFETY RULES



The 12 Salient Safety Rules are the fundamental safety standards expected from everyone in CSL rolls, Partners, Subcontractors & their workmen and Owners/Classification societies to comply with, at all times

When work does not comply with 12 Salient Safety Rules:-

Every individual is responsible and obliged to request for

"सुरक्षा केलिए रुकें"

"WHAT TO DO" FLOW CHART

Observation of Non-Compliance
[Violation of 12 Salient Safety Rules]

Request for "सुरक्षा केलिए रुकें"
[Intervention to "STOP" the Immediate Danger]

Do a Safety Conversation
[Gentle Re affirmation]

Restart after Corrective actions
[Corrective actions to be verified]

Safety & Fire Services Department

"Protect our earth"

"They are waiting you at home"

Paste your family photo here

Specific Terms & Conditions

Enq no: MP1/ Robotic Scanning/ICGS Samudra Paheredar/CMSRU

1. Payment – 100% payment shall be released against invoice certified by Executing officer supported by service report and WCC and other mandatory documents, within 30 days from the date of submission of invoice after successful completion of the job scope.
2. Guarantee – Minimum 06 months guarantee is required for the repaired/overhauled equipment/system and 12 months guarantee is required for renewed equipment / system. In case of Guarantee defects, it shall be attended within 48 hours from the date of intimation.
3. Validity of the offer should be 90 days from the date of submission of offer.
4. Manpower has to be mobilized against CMSRU LOI/WO and work has to be commenced immediately as per the instruction of executing officer.
5. Items shall be delivered at CMSRU (MbPT) on door delivery basis to Hughes Dry Dock (Indira Docks), Mumbai Port Trust, Mazagon, Mumbai and site to be inspected before submitting the offer.
6. CMSRU reserves the full right to change the work scope/amend the work scope according to the site condition.
7. CMSRU reserve the right to offload the job to more than one subcontractor (parallel contract) to meet the schedule against this tender.
8. CMSRU have the full right to modify (Deletion) the work scope in line with the final requirement, time lines of repair project, availability and spares.
9. CMSRU will place composite work order against this tender which includes the cost of material as well as service.
10. Entire scope to be done on turnkey basis with single point responsibility, contract will awarded based on the L1 for the entire scope of work.
11. L1 firm has to provide detailed price split up (if required) within 03 days from the date of confirmation from CMSRU.
12. The projected quantity may vary according to actual job scope. Hence final amount shall be calculated based on the actual work done certified by CMSRU executing officer.
13. Firm to provide necessary valid certificates (wherever required).
14. CSL/CMSRU has the right to withdraw the tender in partial or full during the course of this tender.
15. CSL/CMSRU has the right to accept or reject any or all of the offers.
16. Vendors are requested to submit the bid in the attached price bid format **(in Two Bid)** for avoiding discrepancies/confusions during the comparison stage.

Seal & sign authorised person

17. Vendors are requested to submit a signed copy of Encl. 2, 3,4, 6, 7, 8 & 9along with **unpriced Price bid format** clearly indicating **quoted/not quoted** against each job scope with the Tech. bid for verification.
18. All documents submitted against this tender shall be signed and sealed by authorized persons. Otherwise it may be rejected without prior notice.
19. All tools and tackles for successful completion of the job shall be arranged by the contractor.
20. Contractor shall abide by the CSL safety rules.
21. All consumables for the job shall be in the scope of vendor.
22. Job completion period has to be mentioned in the unpriced priced bid format.
23. All Material passes and Man entry Passes to be arranged by contractor. Required authorization letter only will be issued from CMSRU.
24. Forward offers and communications from mail IDs starting with words as highlighted in below message, since the message will be blocked and may not necessarily reach the indented ID, as indicated in below.

info
support
admin
sales
customersupport
helpdesk
mail
mailadmin
billing
hello
careers

25. Safety Measures that are to be ensured by contractors are :

1.Db IP44 type with ELCB
2.Blower with guard on both side
3.24 volt lamp with wire and DB
4.Flash back and non return valve for Cylinder (DA and Oxygen is allowed)
5.welding machine with ELCB of 30 mA to provided
6.Power tools like Grinding Machine should have handle and guard
7.Proper PPEs need to provided by the contractor to workers
8.Induction class need to attened by the new workers

General Manager (CMSRU)

Seal & sign authorised person

Encl: 7

GENERAL TERMS AND CONDITIONS FOR THE TENDER

1. Tenderers are to carefully go through the terms and conditions and the technical specification of the items for which offers are called for. Deviations, if any, shall be specifically brought out in the offer. On-board inspection if required may be arranged prior to submitting the quotation.
2. Corrections and additions, if any, must be attested. Incomplete/ ambiguous offers are likely to be rejected.
3. In case of bids sent through email, then the documents should be password protected and the passwords should be passed on to the concerned officer while attending the bid opening or by email / SMS immediately before the tender opening against the request from officer.
4. Indigenous renderers should quote prices for delivery of materials at CSL/CMSU stores and in the case of foreign bidders the same shall be on Ex Works / FOB basis only. C&F prices shall also be indicated in the offer. Insurance in all cases shall be arranged by CSL/CMSRU.
5. Prices should be valid for acceptance for a period of four months (04 months) from the date of opening of tender.
6. No enhancement of rate for whatever cause will be allowed once the offer is accepted and an order is placed. Withdrawal of the quotation after it is accepted or failure to make the supply within the stipulated delivery period will entail cancellation of the order and forfeiture of Earnest Money Deposit/Security deposit, if any and/or risk purchase.
7. Taxes and duties, if any, payable extra are to be indicated in the price part for single bid and in techno-commercial part for two bid.
8. Delivery term and delivery time / work completion time required for completing the job scope should be indicated in the offer.
9. CSL/CMSRU terms of payment is 100% payment after delivery of items and in case of service after satisfactory completion of job, within 30 days from the date of submission of Invoice along with all mandatory documents.

10. The firm/ bidder winning the contract shall sign an agreement with Cochin Shipyard Ltd for “fall clause”. Accordingly, during the contract period, the firm / bidder cannot offer the item/s to anyone else at rates lower than the rates quoted, or the same lowest
Rate shall be applicable to the contract with CSL/CMSRU.
11. Manufacturer’s name, their trademark and brand, if any, should invariably be mentioned and illustrative leaflets giving technical particulars etc., should be attached to the offer.
12. Materials supplied shall be new and unused and shall confirm to CSL/CMSRU specifications and drawings.
13. Products supplied shall be nontoxic and harmless to health. In the case of toxic materials, Material Safety Data Sheet may be furnished along with the material.
14. Samples are to be supplied free of cost in the event of requirement by CSL/CMSRU.The detailed working drawing, if called for, is also to be furnished for approval before commencement of manufacture.
15. The quantities in each item to be purchased may vary according to actual requirement at the time of placing orders.
16. Force Majeure condition: Should failure in performance of the contract or part thereof arise from war insurrection, restrain imposed by Government, Act of Legislature or other Statutory Authority or illegal strike, riot, legal lock-out, flood, fire, explosion, act of God or any inevitable or unforeseen event beyond human control which may be construed as reasonable ground for an extension of time, CSL/CMSRU may allow such additional time as is mutually agreed, to be justified by the circumstances of the case. The occurrence/ cessation of force majeure situation is to be informed with documentary evidence within 15 days from the date of occurrence/cessation.

17. Liquidated Damage: In case of delay in supply of ordered materials beyond the stipulated delivery period, supplier is to pay Liquidated Damages (and not by way of penalty) a sum equivalent to ½%(half percent) per week or part of the week of the order value in the case of Machinery/Equipment and of the value of materials delayed in the
Case of all other items, subject to a maximum of 10% of the order value.

18. Risk Purchase: If the supplier fails to supply the items ordered within the delivery date or violate any of the terms and conditions of the purchase order, CSL/CMSRU shall have the following rights.
(1) To terminate the contract with 15 days' notice forfeiting the security deposit.
(2) To initiate alternate procurement action at the risk and cost of the supplier.
19. Guarantee: The equipment supplied shall be guaranteed for satisfactory performance for 12 months from the date of commissioning or 18 months from the date of delivery of items whichever is earlier against faulty design, defective materials and bad workmanship. Supplier should supply and install free of cost immediately any part found to be defective for the above reasons within the guarantee period. The Service shall be guaranteed for a minimum period of 06 months from the date of successful commissioning.
20. Suppliers are allowed to depute their authorized representative to be present at the time of opening of the price bid.
21. Indian Agent: Cochin Shipyard Ltd. is a fully owned Govt. of India Enterprise and prefers to deal directly with the supplier. However, if the supplier appoints an Indian Agent to deal with Cochin Shipyard Ltd., the commission payable by the supplier to such an agency shall be intimated. The Indian agent shall be enlisted with Director General of Supplies and Disposals under the compulsory registration scheme of Ministry of Finance.

22. Jurisdiction: All questions, disputes or difference arising under, out of, or in connection with contracts shall be subject to the exclusive jurisdiction of the Courts at Ernakulum, Kerala, India.
23. In case advance payment is sought, interest at prime lending rates prevailing in India will be charged. In addition, a Bank Guarantee in the CSL format equivalent to advance amount is to be executed to cover the period till the advance payment is adjusted. Normally Advance payments are not encouraged.
24. Conditional discounts, if any, will not be reckoned for tender evaluation/ comparison purposes. However the same will be considered while placement of purchase order if the firm turns out to be L1.
25. After submission of tender, no unsolicited correspondence will be entertained.
26. Cochin Shipyard Limited does not bind itself to accept the lowest or any tender but reserves to itself the right to reject any or all or a part of any tender at its discretion.
27. Deviations, if any, in the offer submitted from that of the tender enquiry in any form, should be clearly furnished in a separate document titled as “List of Deviations”, failing which it will be presumed that all the terms and conditions are acceptable.
28. Reason for non submission of quotation incase of regret shall be noticed without fail, if failure may not consider for future requirements.

29. This tender shall be based on CSL MSME circular No. MAT/MSME/2016 dtd. 27.09.2018. Please refer https://cochinshipyard.com/Msme for the circular.

General Manager (CMSRU)

COMPLIANCE MATRIX

(TO BE SUBMITTED WITH THE "Technical" BID)

SL.NO.	DESCRIPTION	REMARK
1.	ACCEPT THE ENTIRE SCOPE OF WORK AS PER ENQUIRY	YES / NO
2.	IF THE ANSWER TO QUESTION 1 ABOVE IS NO, PLEASE LIST THE SPECIFIC JOBS NOT BEING UNDERTAKEN AS A DEVIATIONS LIST AND ATTACH WITH THIS MATRIX.	LIST OF DEVIATIONS FROM SCOPE OF WORK ATTACHED/ NOT ATTACHED
3.	ACCEPT THE GENERAL TERMS AND CONDITIONS AND TENDER TERMS & CONDITIONS INDICATED IN THE ENQUIRY.	YES / NO
4.	IF THE ANSWER TO QUESTION 3 ABOVE IS NO, LIST THE DEVIATIONS AND ATTACH WITH THIS MATRIX.	LIST OF DEVIATIONS FROM GTC.
5.	PAYMENT TERMS AS INDICATED IN ENQUIRY IS ACCEPTABLE.	YES / NO

(Signature of the Contractor)

Seal of the firm.

Health, Safety & Environment Contract Guidelines for OEMs /Turnkey jobs / Sub contract works inside CSL

Introduction

CSL is the largest public sector shipyard in India in terms of dock capacity, and caters to clients engaged in the defence sector in India and clients engaged in the commercial sector worldwide.

CSL is committed to provide safe and healthy work environment for the prevention of work- related injury and ill health by following the best practices in safety. CSL is certified Occupational Health and Safety management System and Environmental Management system under ISO standards/international standard.

Many of the works of CSL at various sites are executed by the sub-contractors. During these works, sub-contractors personnel are likely to be exposed to different types of hazards. Similarly unsafe acts of contractors personnel may create hazards for CSL staff or workmen of other contractors working at the site. Such unsafe acts may also pose danger to the existing installations and even to members of public.

CSL ensures that the requirements of its HSE Management System are convened by contractors and their workers. This guide is prepared to facilitate safe working during execution of contract works. The General guide lines and HSE requirements are given below for compliance in CSL.

I. General guidelines

1. OEMs/Turnkey jobs /Contractors are selected to work inside the CSL based on their track record.
2. Along with the contract order/Registration, a copy of the HSE Safety Handbook (CSL/ QMS/S&F/SOP 02) of CSL is given to all contractors. The details of all HSE requirements to be followed in CSL for the various types of work are detailed in the hand book. The OEMs/Turnkey jobs /Contractors shall go through all the details and strictly follow the relevant HSE guidelines for their work. In case of any doubt the same shall be clarified from Chief Safety Officer (CSO). Being ignorant of these HSE requirements will not be treated as an excuse for any HSE violations during course of work.
3. OEMs/Turnkey jobs /Contractors workmen are given a multilingual HSE induction and Emergency Response training. The individual passes for contractors and their workers are issued only after successful completion of this training. The passes are revalidated every year after successful completion of refresher training. Training requirements of other roles of the subcontractor's staff shall be complied as per the CSL requirements time to time.
4. Before start of any work, the CSL officer in charge explains the scope of work and the safety precautions, hazards, PPE usage as per PPE matrix of CSL, Work Instructions, SOPs, Emergency responses to the contractor and his workers. Only trained worker with necessary skills are allowed to work as per the requirement. Necessary PPEs for the work are to be arranged by the contractor.
5. Workmen shall have Cotton coverall with identifiable logo on the dress. Supervisors, fire watch man if required, safety staff and other workforce shall be deployed as per CSL guide lines.
6. The site work supervisor of the OEMs/Turnkey jobs /Contractors shall be ensured that works are being carried out by CSL HSE requirements on daily basis and till the completion of works. The safe start and safe end requirements shall be verified by the site work supervisor on daily basis.
7. OEMs/Turnkey jobs /Contractors HSE performance will be evaluated on HSE matters as per the CSL policies time to time.
8. During the course of work if any HSE violation is noticed the same is dealt as per the Rewards and Reprimand (R&R) Policy of CSL.

II. HSE requirements

1. The OEMs/Turnkey jobs /Contractors shall take all safety precautions during the execution of awarded work and shall maintain and leave the site safe at all times. At the end of each working day and at all times when the work is temporarily suspended, he shall ensure that all materials,

equipment and facilities will not, cause damage to existing property, personal injury or interfere with the other works of the project or Station.

2. The OEMs/Turnkey jobs /Contractors shall provide and maintain all type of lights, guards, fencing, warning signs, caution boards and other safety measures for vigilance as and where necessary or as required by the CSL officer-in-charge or Safety staff. The caution boards shall also have appropriate symbols.
3. Where Permit to work (PTW) is required, the work has not started without obtaining the necessary permit and the PTW requirements are followed strictly throughout the work.
4. For Project specific or non-routine work on the existing installations, separate Job Safety Assessment (JSA) is to be prepared by the contractor, cleared by the Dept in charge and approval obtained from CSO before start of work.
5. A separate HSE plan will be required for the new projects in the yard or any turnkey projects. It shall be in line with CSL HSE requirements and same shall be routed through respective S&F dept and approved by respective HOD.
6. OEMs/Turnkey jobs /Contractors shall hold toolbox talks with his workers on daily basis to convey matters regarding the Safety aspects of the work.
7. The OEMs/Turnkey jobs /Contractors shall plan his operations so as to avoid interference with other Departmental works and other Sub-Contractors at the site. In case of any interference, requires, coordination shall be sought by the contractor from the Department for safe and smooth execution of work. This shall be done through CSL executing officer.
8. The OEMs/Turnkey jobs /Contractors shall at all times keep their work spot, site office and surroundings clean and tidy from rubbish, scrap, surplus materials and unwanted tools and equipment. Welding cables, hoses and electrical cables shall be so routed as to allow safe way to all concerned.
9. All waste generated in course of the work shall be segregated as per the yard requirements and shall be disposed at the respective collection pallets / points of the work areas as the case may be. Any kind of pollution made by the subcontractor shall attract the reprimand proceedings.
10. All necessary precautions shall be taken to prevent outbreak of fires at the work site. Adequate provisions shall be made to prevent the possibility of fires and ensure the availability of fire extinguishers at site.
11. The OEMs/Turnkey jobs /Contractors shall be held responsible for non-compliance of any of the safety measures and delays, implications, injuries, fatalities and compensation arising out of such situations of incidents including statutory obligations.

PRICE BID					
MP1/Robotic Scanning/ICGS Samudra Paheredar /CMSRU			**Encl: 2**		
DESCRIPTION	**QTY**	**UOM**	**Unit rate (Rs.)**	**Total rate (Qty x unit rate) Rs**	**GST(%)**
Robotic Scanning of the ships underwater area to be carried out and report to be submitted on satisfactoriness.					
Scope of work: 1. Robotic scanning of entire underwater hull including boot top area to be undertaken by vendor for 50mm x 5mm resolution scanning. 05 copies of robotic scanning report endorsed by Class surveyor and to be rendered to CMSRU executing officer. CMSRU reserves 50% right to vary in quantity, payment to be made as per actuals on pro-rata basis.	1400	Meter square	XX	XX	XX
Terms and conditions:-					
The technician carrying out scanning and gauging should have valid NDT Level 1 certification and same to be produced to the surveyor.					
The scope of work is Turnkey and complete scope will be offloaded to single vendor.					
Vessel location: Cochin Shipyard LTD, Mumbai Ship Repair Unit(CMSRU), Mumbai, Fort					
All Material passes and Man entry Passes to be arranged by contractor. Required authorisation letter only will be issued from CMSRU					
The report is required to be submitted within 10 days from date of measurement					
Delivery Period :					
Seal & Sign of Authorised Person					

SCOPE OF WORK		
MP1/Robotic Scanning/ICGS Samudra Paheredar /CMSRU **Encl: 1**		
Robotic Scanning of the ships underwater area to be carried out and report to be submitted on satisfactoriness.		
Scope of work: 1. Robotic scanning of entire underwater hull including boot top area to be undertaken by vendor for 50mm x 5mm resolution scanning. 05 copies of robotic scanning report endorsed by Class surveyor and to be rendered to CMSRU executing officer. CMSRU reserves 50% right to vary in quantity, payment to be made as per actuals on pro-rata basis.	1400	Meter square
Terms and conditions:-		
The technician carrying out scanning and gauging should have valid NDT Level 1 certification and same to be produced to the surveyor.		
The scope of work is Turnkey and complete scope will be offloaded to single vendor.		
Vessel location: Cochin Shipyard LTD, Mumbai Ship Repair Unit(CMSRU), Mumbai, Fort		
All Material passes and Man entry Passes to be arranged by contractor. Required authorisation letter only will be issued from CMSRU		
The report is required to be submitted within 10 days from date of measurement		
Delivery Period :		
Seal & Sign of Authorised Person		

UNPRICE BID					
MP1/Robotic Scanning/ICGS Samudra Paheredar /CMSRU			Encl: 3		
DESCRIPTION	QTY	UOM	Unit rate (Rs.)	Total rate (Qty x unit rate) Rs	GST(%)
Robotic Scanning of the ships underwater area to be carried out and report to be submitted on satisfactoriness.					
Scope of work: 1. Robotic scanning of entire underwater hull including boot top area to be undertaken by vendor for 50mm x 5mm resolution scanning. 05 copies of robotic scanning report endorsed by Class surveyor and to be rendered to CMSRU executing officer. CMSRU reserves 50% right to vary in quantity, payment to be made as per actuals on pro-rata basis.	1400	Meter square			
Terms and conditions:-					
The technician carrying out scanning and gauging should have valid NDT Level 1 certification and same to be produced to the surveyor.					
The scope of work is Turnkey and complete scope will be offloaded to single vendor.					
Vessel location: Cochin Shipyard LTD, Mumbai Ship Repair Unit(CMSRU), Mumbai, Fort					
All Material passes and Man entry Passes to be arranged by contractor. Required authorisation letter only will be issued from CMSRU					
The report is required to be submitted within 10 days from date of measurement					
Delivery Period :					
Seal & Sign of Authorised Person					