# TENDER No.: UCSL/CC/T/W/041 Dt 11th November 2024

# TENDER FOR AIR PRESSURE TEST (APT)/HYDRO PRESSURE TEST(HPT) OF TANKS ON 3800 DWT GENERAL CARGO VESSEL



## UDUPI COCHIN SHIPYARD LIMITED MALPE, UDUPI 576108





Udupi Cochin Shipyard Limited Tender For Air Pressure Test (APT)/Hydro Pressure Test(HPT) Of Tanks On 3800 DWT General Cargo Vessel UCSL/CC/T/W/041 Dt 11<sup>th</sup> November 2024

# TENDER NOTICE

Tender No. & date	UCSL/CC/T/W/041 Dt 11 <sup>th</sup> November 2024
Name of work	Tender For Air Pressure Test (APT)/Hydro Pressure Test (HPT) of Tanks On 3800 DWT General Cargo Vessel
Last date & time of receipt of tender	16 <sup>th</sup> November 2024 (Saturday), 15:30 Hrs.
Date & time of opening of Technical Bid (Part-1)	16 <sup>th</sup> November 2024 (Saturday), 15:30 Hrs.

- Password protected quotations in the prescribed form is invited from bidders for the work specified above, subject to the terms and conditions as mentioned in the annexure to the tender enquiry so as to reach the undersigned by email mentioned on or before the date and time as stipulated.
- 2. The following shall be submitted along with the quote: -

### PART- I: TECHNICAL BID

- a. Tender document duly signed on all pages Including Terms & conditions and scope of work and indicative quantum of work placed at Annexure I, II and III respectively.
- b. The Techno commercial Check List at Annexure VI to be filled up completely and duly signed.
- c. Duly filled form at Annexure IV and VII
- d. Unpriced Price bid (Price bid without price and marked as "QUOTED") to be submitted along with Part-I.

#### PART-II: PRICE BID

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a. The price bids shall be prepared based on the price bid format at Annexure V.

#### 3. Mode of Submission of Quote:

- Bid shall be submitted as Password Protected Zip File in two parts.
  Part I: Technical Bid with all enclosures and annexures as mentioned in Para 3 above Part II: Price Bid.
- ii. The files are to be forwarded as Two (2) separate password protected Zip files to <u>contractcell@udupicsl.com</u>
- iii. Part I and Part II are to be protected with separate and distinctly different passwords.
- iv. The Bids will be opened on online mode during which the bidder will be advised to share the password through SMS with which the technical bid will be opened.



Udupi Cochin Shipyard Limited Tender For Air Pressure Test (APT)/Hydro Pressure Test(HPT) Of Tanks On 3800 DWT General Cargo Vessel UCSL/CC/T/W/041 Dt 11<sup>th</sup> November 2024

- v. The price bids will be opened after technical evaluation and **only the technically qualified bidders will be invited for opening of price bids** which shall also be conducted on online mode as above.
- vi. However, subject to travel restrictions, the bidders can also attend the bid opening physically at Udupi Cochin Shipyard Limited, Baputhotta Ware house complex office.
- vii. The contractors can also submit the quotations in sealed covers (Two-Bid) as separate sealed covers for Technical Bid and Price bid, both enclosed in a common sealed cover to reach the below mentioned address before the stipulated time.
- 4. The bidders shall ensure the receipt of bids at <u>contractcell@udupicsl.com</u> An acknowledgement mail shall be sent to the bidders on receipt of bids. UCSL takes no responsibility for delay, loss or non-receipt of tenders by mail by the stipulated time.
- The tender should be addressed to the Assistant General Manager (Materials & Contract Cell), Udupi Cochin Shipyard Limited, Malpe Harbor Complex, Malpe, Udupi 576 108, Karnataka, India.
- 6. No deviations on the tender conditions will be accepted, and bids with deviations will be considered technically disqualified. The acceptance of a tender or part thereof will rest with the Assistant General Manager (Materials & Contract Cell), Udupi Cochin Shipyard Limited and the authority reserves the right to reject the tender received without assigning any reason.
- 7. Contact Person: Mr. Sarun Babu E.B (08592048487)

Assistant General Manager (Material & Contract Cell)

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Encl:

- 1. Terms & Conditions
- 2. Scope of Work
- 3. Indicative Quantum of items
- 4. Power of Attorney
- Price Bid
- 6. Techno-Commercial check List
- 7. Unconditional Acceptance Letter
- Annexure I
- Annexure II
- Annexure III
- Annexure IV
- Annexure V
- Annexure VI
- Annexure VII





### TERMS AND CONDITIONS

#### TENDER FOR AIR PRESSURE TEST (APT)/HYDRO PRESSURE TEST(HPT) OF TANKS ON <u>3800 DWT GENERAL CARGO VESSEL</u>

#### 1. DESCRIPTION OF WORK

- 1.1. This tender enquiry pertains to the awarding of contract for Outsourcing of air pressure test (APT)/Hydro pressure test (HPT) of tanks on 3800 dwt general cargo vessel to be built at Udupi Cochin Shipyard Limited (UCSL), Hangarkatta/Malpe, Karnataka.
- 1.2. The work includes inspecting the tank allotted, identifying the tank boundaries and bulkhead penetrations, blanking the tank openings, air pressure testing, Hydro pressure testing, checking for leaks at bulk head penetrations, checking of leaks at tank boundaries, checking tank structural boundaries, making the tank hold sufficient pressure as per test standards, present the APT/HPT survey to QC, present the APT/HPT survey to owner/class after QC is cleared, making the necessary arrangement for entering the tank if QC/surveyor requests, removing all the blanks after the survey, refitting bell mouth if removed and closing the manholes after survey provided by Udupi Cochin Shipyard Ltd (UCSL) Terms and conditions in all respects.
- 1.3. You are requested to obtain clarifications, if any, and carefully study the documents and the scope of services and UCSL, before submitting your offer.
- 1.4. The Contractors are advised to familiarize themselves with the site conditions before quoting.

#### 2. SCOPE OF WORK

- 2.1. Air pressure test (APT)/Hydro pressure test (HPT) of tanks to satisfactorily complete the work in accordance with UCSL, Classification Society and Owner's requirements
- 2.2. Refer Annexure II and Annexure III for detailed scope of work.
- 2.3. This is a turnkey job and any additional works up to 10% growth of work to be envisaged and is to be undertaken without any additional price impact.

#### 3. METHOD OF AWARDING CONTRACT

- 3.1. Contract will be concluded with Bidder qualifying technically, agreeing to Techno-Commercial conditions (Annexure VII) and emerging as L1 based on Annexure - VI.
- 3.2. The bidder shall submit the prices at the Annexure V and the same rates shall be applied to the for L1 determination.
- 3.3. Yard intends to award the total scope of work for 05 ship, out of which 02 ship is confirmed and remaining 03 ship as option.





- 3.4. The order of 5 ship would be split between two bidders, UCSL intends to place the scope of work for three ships set on L1 bidder and scope of 02 ship set on next in line L2/L3/L4/Etc. bidders, subjected to matching the L1 rate.
- 3.5. The L1 bidder will be awarded with the scope of work of three vessel each as confirmed and the L2 bidder will be called for negotiation to meet the L1 bidder's rate to award work order for next two vessels. Incase L2 bidder is not willing to match L1 bidder's rate, L3/L4/L5 etc. bidders will be invited for the negotiation to match L1 bidder rate.
- 3.6. If L2/L3/L4/L5 etc. are not willing to match with L1 bidder's rate, hence work order for remaining Four (4) vessel will be placed on L1 bidder based on their performance on the already awarded vessels and this decision to award balance four (4) vessel will be sole discretion of UCSL.
- 3.7. In case of the contractor fails to perform at any stage of the project, the yard reserves the right to delink the individual ship scope of work and will award the same to alternate contractor. In such cases, the value shall be determined based on Annexure-V which shall be deduction from the total contract value for payments.
- 3.8. The contractor shall indicate the fabrication lead time as per the requirement of Annexure-III. However, the schedule as issued by the yard shall be final and binding which shall be reasonable and in line with the overall project schedule.
- 3.9. UCSL reserves the right to cancel the tender if required.

#### 4. COMMON REQUIREMENTS

4.1. Work will be undertaken and inspected as per the quality standards provided by UCSL, and approved by CLASS and Owner of the vessels. The same may be seen prior bidding, if required. Copy of the standards will be provided while awarding contract.

#### 5. QUALIFICATION CRITERIA FOR BIDDERS

- 5.1. The Bidder shall be a single firm having experience in dry survey/Pressure testing in ships or floating marine structures.
- 5.2. The bidders shall have minimum 1 year of experience in mentioned jobs as per clause 5.1.
- 5.3. Bidder shall not be under a declaration of ineligibility issued by Govt. of India/ State govt./ Public Sector Undertakings etc. The bidder shall not have been debarred / black listed by UCSL or by any of the Public Sector Undertaking or Government department etc.

#### 6. SCHEDULE OF COMPLETION

6.1. UCSL shall indicate the master construction schedule of completion of the work of vessel. The contractor in turn shall submit their detailed scheduled of completion of the work, in consultation with the officer In-charge. The progress of work shall be made in tandem with the progress of completion of the vessel allowing sufficient time for other interface activities/works.





- 6.2. Yard has the right to change the schedules of the project to the interests of the company and the firm should be capable of adjusting the resources according to the instructions from the Yard contact person.
- 6.3. Detailed working schedule (Weekly/monthly) etc to be prepared and submitted to yard personnel. However, a detailed overall schedule, in a reasonable manner should be submitted prior to commencement of work.

### 7. INSPECTION

- 7.1. The vessel shall be built under the classification of BV Class.
- 7.2. Work will be undertaken and inspected as per the quality standards provided by UCSL, and approved by CLASS and Owner of the vessels.
- 7.3. The complete work has to be carried out under the survey of UCSL, CLASS and Owners. The works are to be inspected and approved by UCSL initially and thereafter presented to CLASS and the Owner for their survey and approval.
- 7.4. All test and Inspections shall be carried out as per approved Quality Plan.
- 7.5. All correspondence with the Shipyard to be in English language. All documents and plans to be in English language and in metric units.

#### 8. VALIDITY

8.1. The offer shall be valid for a period of 06 months and no escalation in rate shall be allowed by UCSL on whatsoever reason.

#### 9. <u>RATE</u>

9.1. Rates are to be quoted in the Price Bid Format at Annexure-V attached herewith.

#### 10. PAYMENT TERMS

- 10.1. Payment shall be made at actual within 30 days from the date of submission of bill and work completion certificate from the executing UCSL officer.
- 10.2. Invoice shall be submitted with necessary work completion certificate duly certified by UCSL representative and payment will be made on actuals only.
- 10.3. Payment will be made by RTGS/NEFT to the account of Agency. The name of the bank, branch, A/C No., IFSC code & other particulars shall be furnished by the Agency in the proforma of UCSL.

### 11. TAXES & DUTIES

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- 11.1. GST shall be applicable extra on the prescribed work. You are requested to furnish the following details in the invoice/Bill.
  - Applicable rate of GST/SAC Code
  - Firms GST Reg. NO.
  - Service accounting code (SAC) as prescribed by statutory authorities.
  - GST Reg. No. of Udupi Cochin Shipyard Limited(29AAACT1281B1ZO).



#### 12. PERIOD OF CONTRACT & COMMENCEMENT OF SERVICES

12.1. Period of contract will be One year from the date of work order. The rates quoted and all other terms and conditions will remain unchanged for the entire period and also for the extended period (if extended).

#### 13. SECURITY DEPOSIT

13.1. The successful tenderer shall remit 5% of the value of the contract as security deposit within 15 days of receipt of the work order. This amount may be remitted by way of demand draft or bank guarantee (in approved proforma of UCSL) from any of the nationalized banks, valid till the satisfactory completion of the entire work. The Security Deposit will be released on certification of satisfactory completion of the contract and no liability to UCSL by Officer-in charge. The Security Deposit retained will not bear any interest.

#### 14. PERFORMANCE GUARANTEE

- 14.1.The complete work carried out by the contractor shall be guaranteed against defective on poor workmanship for a period of six months from the date of completion of work or till delivery of that vessel, whichever is earlier. Any work found defective during this period is to be repaired entirely at the contractor's cost at the vessel's location and such repaired items shall be guaranteed for a further period of three months from the date of repair.
- 14.2. Should any unsatisfactory performance and / or damage or failure occur due to poor workmanship and poor-quality material used by the contractor, the contractor shall be solely responsible for payment/reimbursement of expenditure incurred by Ship owner for rectifying the defect.
- 14.3. Towards this, a performance guarantee equivalent to 5% of the value of the contract to be furnished by the contractor on completion of the works by way of a bank guarantee (in approved proforma of UCSL) from a nationalized bank valid till the expiry of the guarantee period. In case the contract fails to submit the PG in time, SD mentioned at Clause 10 will be retained till the expiry of guarantee period.

#### 15. LIQUIDATED DAMAGES

- 15.1. The progress of work will be monitored against the mutually agreed detailed schedule. Liquidated damages for delays in execution of the work beyond the scheduled date of completion, for any reason other than force majeure conditions, will be recovered at the rate of half percent of the value of the contract per week or part thereof, subject to a maximum of ten (10) percent of the value of the contract.
- 15.2. For better clarity, order values mentioned in LD clause are values excluding duties and taxes (Basic value). Liquidated damages, if any, shall be decided and settled only after the completion of the entire project but prior to the release of Final stage Payment.
- 15.3. If, for any reasons, supplier has a justification towards delay in supply / work execution and would intend to consider applicability/ non applicability of LD, the same shall be intimated to UCSL by way of a letter, failing which it will be deemed that delay is attributable to the supplier.



15.4. Delay in supply/Interruption of the work for reasons not attributable to supplier shall entitle extension of the order execution period for proportionate period without any additional cost to UCSL.

#### 16. POWER OF ATTORNEY

- 16.1. The tenderer(s) shall have to sign in each page of the tender documents with official stamp as a token of his acceptance of the conditions stated therein.
- 16.2. The person signing the tender form on behalf of another or on behalf of a firm, shall enclose to the tender, a Power of Attorney or the said deed duly executed in his favour or the partnership deed giving him such power showing that, he has the authority to bind such other persons or the firm, as the case may be, in all matters pertaining to the contracts. If the Person so signing the tender, fails to enclose the said Power of Attorney, his tender shall be liable for being summarily rejected. The Power of Attorney shall be signed by all partners in the case of partnership concern, by the Proprietor in the case of a proprietary concern, and by the person who by his signature can bind the company in the case of a Limited Company.

#### 17. TERMINATION & LIMITATION OF LIABILITY

- 17.1. This contract may be terminated upon the occurrence of any of the following events
- 17.2. By agreement in writing of the parties hereto;
- 17.3. By the non-defaulting party, upon default by the other party, of any clause of this contract, if not remedied within fifteen (15) days, or such longer time as may be agreed upon by the parties, after receipt of notice thereof in writing from the non-defaulting party;
- 17.4. By the other party, upon either party;
  - i. Making the assignment for the benefit of creditors, being adjudged a bankrupt or becoming insolvent; or
  - ii. Having a reasonable petition filed seeking its' dissolution or liquidation, not stayed or dismissed within sixty (60) days; or
  - iii. Ceasing to do business for any reason.
- 17.5. For fraud and corruption or other unacceptable practices.
- 17.6. Upon expiry or termination of this Contract, neither party shall be discharged from any antecedent obligations or liabilities to the other party under this Contract unless otherwise agreed in writing.
- 17.7. UCSL may by notice in writing to Contractor to terminate the order after issuing due notice i.e., 30 days' notice period. UCSL shall be entitled to compensation for loss limited to the order value.



17.8. Liability maximum that can be claimed by the Contractor shall be limited to what is due to be and has been paid by UCSL for work done as per the payment milestones and limited to work order value.

#### 18. ARBITRATION & JURISDICTION

- 18.1. Any disputes arising during the period of the contract shall, in the first instance be settled by mutual discussions and negotiations. The results of such resolution of dispute shall be incorporated as an amendment to the contract, failing which supplier shall approach the UCSL Grievance Redressal Committee as per relevant clause of the Contract.
- 18.2. If any dispute, disagreement or question arising out of or relating to or in consequence of the contract, or to its fulfillment, or the validity of enforcement thereof, cannot be settled mutually or the settlement of which is not herein specifically provided for, then the dispute shall within thirty days from the date either party informs the other in writing that such disputes, disagreement exists, be referred to arbitration. The arbitrators shall be appointed and the arbitration proceedings shall be conducted in accordance with and subject to the Arbitration and Conciliation Act, 1996 (No. 26 of 1996) as amended from time to time and the decision of the Arbitrators shall be final and binding on the parties hereto. The arbitration will be done by a Board comprising one arbitrator nominated by each party, and a mutually agreed Umpire. Each party shall bear its own cost of preparing and presenting its case. The cost of arbitration shall be shared equally by the parties unless the award provides otherwise. Performance under this Contract shall however, continue during arbitration proceedings and no payment due or payable by the parties hereto shall be withheld unless any such payment is or forms a part of the subject matter of arbitration proceedings.
- 18.3. Seat & Venue of Arbitration: The seat & venue of arbitration shall be at Bangalore.
- 18.4. Language of Arbitration: The Language of arbitration shall be English.
- 18.5. Governing Law: The contract shall be governed by Indian Law
- 18.6. In case of disputes, the same will be subjected to the jurisdiction of courts at Bangalore, Karnataka.

#### **19. SUB CONTRACTING AND ASSIGNMENT**

- 19.1. Contractor shall not assign or transfer the Purchase Order/ Work Order or any share or interest therein in any manner or degree to any third party without the prior written consent of UCSL.
- 19.2. Contractor shall not contract with any subcontractor and/or vendor without the prior written consent of UCSL. Such consent shall not relieve the Contractor from any of his responsibilities and liabilities under the Purchase Order/ Work Order. In addition, Contractor shall ensure that the terms and conditions of any such contract shall comply with and correspond to the terms and conditions of the Purchase Order/ Work Order.





#### 20. SECRECY & RESTRICTION ON INFORMATION TO MEDIA

- 20.1. The information contained in the enquiry as such shall NOT be communicated to any third party without prior approval of UCSL.
- 20.2. Information in respect of contracts/orders shall NOT be released to the national or international media or anyone not directly involved in its execution without the written approval of UCSL

#### 21. CANCELLATION OF ORDER AND RISK CONTRACTING

- 21.1.In the event the Contractors fails to complete the work promptly and satisfactorily as per the terms of the order, and if any work is delayed beyond thirty (30) days from the agreed schedule, UCSL, without prejudice, reserves the right to cancel the order and get the work done at Contractor's cost and the expenditure so incurred including any damage or loss will be recovered from him and the Security Deposit furnished by him is liable to be forfeited either in whole or in part.
- 21.2. UCSL also reserves to right to impose penalties ranging from Rs. 100 to Rs.500 to the employees of contractors and will be deducted from the bills, for any habitual offence on the cleanliness of uniforms, lack of obedience, not attending the tasks etc., and will be to the discretion of the Officer in charge for the work.

#### 22. FORCE MAJEURE

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22.1. Should failure in performance of any part of this contract arise from war, insurrection, restraint imposed by Government act or legislation of other statutory authority, from explosion, riot, legal lock-out, flood, fire, act of God or any inevitable or unforeseen event beyond human control which will be construed as a reasonable ground for extension of time, UCSL may allow such additional time as is mutually agreed to be justified by the circumstances of the case.

#### 23. SAFETY OF PERSONNEL AND FIRST AID

- 23.1. The contractor shall be entirely responsible for the safety of all the personnel employed by him on the work. In this regard, he may adopt all the required safety measures and strictly comply with the safety regulations in force. A copy of UCSL's "Safety Rules for Contractors (Revised)" is available with HSE department for reference.
- 23.2. The Contractor may arrange to suitably insure all his workmen/ other personnel in this regard. UCSL will not be responsible for any injury or illness to the Contractor's workmen/other personnel during execution of the works due to whatsoever reasons.
- 23.3. In this regard, the Contractor will have to fully indemnify UCSL against any claims made by his workmen/other personnel
- 23.4. The Contractor shall provide and maintain so as to be readily accessible during all working hours, a first aid box with prescribed contents at every place where he employs contract labor for executing the works.



#### 24. IMS GUIDELINES

- 24.1. UCSL implemented an Integrated Management System (IMS) and the Quality Management System (QMS) within the yard. As part of IMS, subcontractors shall comply with the following measures related to the Quality, Health, and Safety & Environment (QHSE) policy of UCSL.
  - a) Meeting or exceeding customer requirements.
  - b) Assuring quality of the products and service.
  - c) Preventing occupational ill health & injuries.
  - d) Ensuring safe work sites.
  - e) Conserving natural resources.
  - f) Preventing / minimizing air, water & land pollution.
  - g) Handling and disposal of Hazardous wastes safely.
  - h) Complying with statutory & regulatory and other requirements.
  - i) Developing skills and motivating employees.
- 24.2. Occupational Health, safety & Environmental requirements of UCSL shall also include the following.
  - a) The contractor (or a sub-contractor performing work on behalf of the contractor) is deemed to comply with the Occupational health, safety and environmental policy of the company and also to all operational controls/standard operating procedures and shall undertake the work in total compliance with the requirements of the established Integrated Management System (IMS) of the company.
  - b) The Contractor shall undertake the work in total compliance with all applicable legal/statutory requirements related to occupational health, safety and environment effective in the state of Kerala.
  - c) It is the sole responsibility of the contractor to assure that any sub-contractor/s who shall perform works in company lands/facilities/worksites on behalf of the contractor, is also following all requirements related to the Integrated Management System of the company and the health/safety/environmental Rules effective in the state.
  - d) The contractor shall provide/implement and operate/practice all occupational health, safety and environmental management measures/facilities, for their period of contract, in their activities/at their work sites, which shall be required according to the IMS of the company or that required by the health/safety/environmental Rules established and effective in the state, at their own cost.
  - e) If any contractor failed to comply with or violated any clauses/requirements of occupational health, safety and environmental Rules effective in the state, in their activities or at work sites and the same shall be exposed to the government or any competent authorities upon inspections, the contractor shall be solely responsible for all liabilities caused by his/her action and shall be responsible for paying the penalty and taking stipulated corrective actions insisted by the authorities within the specified





time, at their own cost. Any liability to the company in this regard needs to be compensated by the contractor.

- f) Upon completion of the work, contractor shall clear the area and shall not leave any Occupational health/safety/environmental liabilities to the company, from their activities at the worksites.
- g) Any clarification related to IMS requirements of the yard, may be obtained by the contractor from the AGM (HSE) or the authorized representative of the contract, prior to the commencement of work.

#### 25. LABOUR LAWS AND REGULATIONS

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- 25.1. The Contractor shall undertake and execute the work with contract Labor only after taking license from the appropriate authority under the Contract Labor (Regulation & Abolition) Act 1970.
- 25.2. The Contractor shall observe and comply with the provisions of all labour and industrial laws and enactments and shall comply with and implement the provisions of the Factories Act, 1948, `Employees Provident Funds & Miscellaneous Provisions Act, 1952, Employees State Insurance Act, Payment of Gratuity Act, minimum Wages Act, Payment of Bonus Act, Contract Labour (Regulation and Abolition) Act and all other enactments as are applicable to him and his workmen employed by him. The Contractor shall inform UCSL his license number from the Central Labour Commissioner.
- 25.3. All Persons, except those exempted under the respective Acts, shall necessarily be insured under the ESI scheme and be made members of the EPF Scheme from the day of their engagement as personnel in the Company. In Case 1, All such insured Persons should carry with them their ESI Identity Card for verification by the authorities. No Persons without a valid ESI Identity Card for verification by the authorities will be permitted to work in the company.
- 25.4. The Contractor shall submit the Labour Reports/Returns as required by the Company from time to time in respect of their workmen in standard format to the concerned contracting officer so as to enable the same to reach Contract cell by the 5th of every month. Delayed submission of the same shall attract penal interest /damages at the rate as levied by the respective authorities under the relevant Acts.
- 25.5. The Contractor shall maintain the records viz. Muster Roll, Acquittance Roll with full details, Account books etc., in original. These are required for inspection by the concerned authorities under each scheme.
- 25.6. If the Contractor fails to pay any contributions, charges or other amounts payable under any of the aforementioned provisions of law, UCSL shall deduct or adjust amounts equivalent to such contribution, charges or amounts from amount payable to him by UCSL, including any deposit or amounts payable against bills and make payments on his account to the appropriate authority. He shall not be entitled to question or challenge such deductions, adjustments or payment made by UCSL.

- 25.7. Any other amount payable under any law or in respect of any person employed by the Contractor, if not paid by him, shall be deducted or adjusted by UCSL out of any amount payable to the Contractor including any Security Receipt and paid ever or withheld for payment by UCSL.
- 25.8. The Contractor shall be fully responsible for the conduct and discipline of the workmen employed by him in the Company premises. If such workmen commit any misconduct or criminal act inside the Company, the Contractor shall take appropriate action against such workmen. The Contractor shall abide by the instructions/ guidelines issued by the Company for maintenance of discipline and good conduct among the workmen employed by him.
- 25.9. All persons who are engaged for various works in UCSL either directly or through Contractor, should produce the following documents prior to issuing their entry passes:
- 25.10. Passport/Aadhaar attested copy of passport with photo and address particulars.

OR

Police clearance certificate with photo and address particulars. (Police clearance certificate to the effect that the concerned person is staying in the area of jurisdiction of the certificate issuing Police Station and that the person is not involved in any criminal offences as per the records available therein.)

- 25.11. Application and Declaration for enrolling under Employees Provident Fund and ESI Scheme- 3 individual passport size photographs and two copies of family photographs of the members.
- 25.12. Contractor shall familiarize themselves with the labour rules & regulations.

#### 26. OVERWRITING & CORRECTIONS

26.1. Tenders shall be free from overwriting or erasures. Corrections and additions, if any, shall be duly attested and a separate list of such corrections shall be attached with the offer

#### 27. OTHER TERMS & CONDITIONS

- 27.1. Quality of services shall conform to the specification/ standards laid down by UCSL.
- 27.2. UCSL reserves the right to accept / reject any offer.
- 27.3. UCSL reserves the right to award the work to more than one contractor or to take over partially or fully the work depending upon the schedule requirements.
- 27.4. During the evaluation of tender, officer-in-charge may seek clarifications from the bidders. Clarification if any shall be given in writing/e-mail. Officer-in-charge's decision will be final and binding on the bidder.
- 27.5. Compliance of all statutory safety requirements and other safety rules stipulated by UCSL and other applicable statutory bodies shall be the responsibility of the Contractor while working at UCSL premises. The Contractor should ensure that their workmen and staff are adequately covered under Insurance.



- 27.6. Damages caused to the Shipyard properties/tools/accessories should be rectified by the Contractor at his cost or proportional recoveries will be made from the Contractor while passing their bills for payment.
- 27.7. The service provider shall have to engage men on round the clock basis and also on Sundays and holidays. Service has to be completed to the satisfaction of Udupi Cochin Shipyard Limited officer in-charge.
- 27.8. The service provider shall indemnify UCSL or its officers against any claims arising out of accidents or injuries to workmen or other persons or damage to other property which may arise during the execution of the contract or from breach of any Law or Regulation prior to delivery and acceptance of the items at UCSL.
- 27.9. The service provider shall also be governed by the General Conditions of Contract of UCSL, General Safety Rules and other relevant labour laws.
- 27.10. The upper age limit of all workers and supervisors employed by the Contractor and those Contractor who do or supervise the job themselves shall be as per the prevailing rules of UCSL and shall comply to the requirements of this tender.
- 27.11. Assistant General Manager, or his authorized representative will be the Officer-incharge of these contracts.





### SCOPE OF WORK

### TENDER FOR AIR PRESSURE TEST (APT)/HYDRO PRESSURE TEST(HPT) OF TANKS ON 3800 DWT GENERAL CARGO VESSEL

#### 1. SCOPE OF CONTRACTOR:

- 1.1. The contractor shall complete the work with the available infrastructure facilities and materials provided by Udupi Cochin Shipyard Ltd (UCSL) in accordance with the enclosed specifications and drawings.
- 1.2. The work shall be carried out based on the tank plan of the vessel, Inspection testing protocol, UCSL mentioned standards and Design drawings. The scope of contractor is tank testing (APT & HPT) of various tanks onboard
- 1.3. Conduct the APT/HPT as per the procedure attached in Appendix B & C.
- 1.4. The work includes inspecting the tank allotted, identifying the tank boundaries and bulkhead penetrations, blanking the tank openings, air pressure testing, Hydro pressure testing, checking for leaks at bulk head penetrations, checking of leaks at tank boundaries, checking tank structural boundaries, making the tank hold sufficient pressure as per test standards, present the APT/HPT survey to QC, present the APT/HPT survey to owner/class after QC is cleared, making the necessary arrangement for entering the tank if QC/surveyor requests, removing all the blanks after the survey, refitting bell mouth if removed and closing the manholes after survey provided by Udupi Cochin Shipyard Ltd (UCSL) Terms and conditions in all respects.
- 1.5. 2 tests for APT which includes one production/QC test and a final test for owner/surveyor and 1 test for HPT which includes QC/Owner and surveyor are under the scope of contractor.
- 1.6. Total 49 tanks are there in each vessel. They are classified based on tank volume. Arrangement of the tanks shown as per Appendix A. The contractor has to prepare a bid which contains a specific price for each tank. This price is considered as the price for executing APT/HPT of one tank.
- 1.7. The number of tanks mentioned is indicative only. Actual number of tanks which need to be tested will be based on actual conditions and owner/class requirements
- 1.8. Contractor has to do the mopping the debris and dewatering if any in the tank to make it presentable for the survey.
- 1.9. Blanking arrangement to be done by contractor as per the shape and size required at the place, material will be provided by UCSL
- 1.10. All tools, calibrated gauges, hoses, soap solution and testing accessories required for the work are under the scope of the sub-contractor.
- 1.11. Paint buffing on the weld seems to be removed wherever applicable, necessary tools will be under contractor scope
- 1.12. Scaffolding up to 3m height shall be erected by the contractor for the work using CSL material without any separate payment. Any requirement over and above this shall be arranged by UCSL separately.



- 1.13. Safety warning board need to be displayed at suitable locations to inform others about the test and prevent any potential accidents.
- 1.14. Yard Safety department should be intimated prior to the testing onboard.
- 1.15. After the test completion, the sub-contractor should return back the nut, bolt and gasket to yard custodian.

### The scope of the contractor also includes:

- 1.1. Collection, Transportation/unloading of materials / other equipment's from UCSL shops/store to contractor's site/skid in UCSL premises.
- 1.2. Arrangement of required tools and tackles like steel rules, punches, hammers, warpage removing jacks, bottle screws, grinders, hydraulic jacks etc. Cutting tools, gas cutting sets and hoses, welders flux chippers, painting brush, wire brush etc. The required Welding sets including arc (SMAW) welding machine, Co2 (FCAW, Sub-merged arc welding (SAW)) welding sets, all these types of welding machines are required at site for carrying out fabrication & erection works, including the arc gouging process (SMAW) suitable machine need to be arranged (Ranging from 600Amps to 8000 Amps), air arc gouging sets, welding cables, gas heaters and regulators, welding holders, baking ovens (including mother & portable ovens) etc. are required for fabrication & erection.
- 1.3. APT/HPT works are to be carried out at Hangarkatta and Malpe Yard of UCSL.
- 1.4. Arrange local material handling facilities like pulley blocks, cylinder handling mainly trolleys required for (Co2, O2 & DA), tripods etc.
- 1.5. The contractor shall ensure that the necessary manpower for successful completion of the work. Qualified fabrication and erection supervisors, Fabricators, Fitters, Markers, Welders, Helpers and cleaners. The Supervisor for the contractor shall be qualified with sufficient experience in Fabrication and erection and should be able to handle the team single handedly based on the drawings supplied by UCSL. At least One (1) HSE representative is also to be arranged by the subcontractor at his work site who shall report to the HSE in charge of yard and shall ensure that the HSE requirements are complied.
- 1.6. The contractor shall provide their employees with all Personal Protective Equipment (PPE) such as safety helmets, gloves, welding shields, goggles, leg guards, safety belts, safety harness, safety aprons and safety shoes and shall ensure safety of personnel at the site at all times.
- 1.7. HSE representative shall conduct weekly quality and safety patrols with UCSL officer and terminate observations within 7 days if any are found.
- 1.8. Ensuring best HSE practices at site during the construction of vessel, which includes mandatory work permits/certifications/approvals in accordance with the prevailing guidelines in UCSL.
- 1.9. The Contractor shall execute the work in accordance with the specifications / drawings issued and to the satisfaction of UCSL.
- 1.10. Contractor shall maintain quality as per UCSL quality standards and yard quality procedures. UCSL will conduct inspection during fabrication/erection.

### 2. SCOPE OF UCSL:

CONTRACT

1.1. The gasket, bolt and nut will be provided by UCSL for closing the tank.

1.2. Providing the tank plan and UCSL quality standards.

1.3. Power supply and compressed air (at available pressure) at centralized points



Udupi Cochin Shipyard Limited

TENDER FOR AIR PRESSURE TEST (APT)/HYDRO PRESSURE TEST(HPT) OF TANKS ON 3800 DWT GENERAL CARGO VESSEL UCSL/CC/T/W/041 Dt 11<sup>th</sup> November 2024

- 1.4. Pump & Fresh water for hydro testing will be under UCSL
- 1.5. If any weld leaks are found during testing, the rectification is under the yard scope.
- 1.6. Electricity at the nearest location to the site will be provided. Contractor has to arrange proper cables for taking electricity at site.
- 1.7. Water for drinking and other purpose will be provided.
- 1.8. Required space for storage of materials inside the Yard, as necessary for the work.
- 1.9. Assistance from yard will be limited to Entry pass for personnel /Crane assistance/Fork Lift assistance for loading and unloading of items within UCSL premises, subject to availability at free of cost.
- 1.10. UCSL shall not be responsible for any compensation to personnel for injuries etc under any circumstance, whatsoever.
- 1.11. An experienced and qualified Supervisor shall be in full time charge of the job.

#### 3. ADDITIONAL WORKS

- 1.1. This is a turnkey job and any additional works up to 5% growth of work in terms of addition or minor works to be envisaged and is to be undertaken without any additional price impact.
- 1.2. In case of rework/modification/additional work, written consent is to be obtained from the UCSL officer-in-charge before commencement of the work.
- 1.3. The Contractor is expected to have full knowledge and understanding of the safety practices prevalent in the Yard and premises. The contractor shall be entirely responsible for all matters related to manpower and labour engagement for the subject contract.
- 1.4. The Contractor is to ensure proper cleanliness all around his work area while working on board ship. The contractor shall arrange to collect and clean up every day; all the waste, scrap, debris etc. generated by his workmen while working on board the ship and other locations and deposit the same suitably at specified location at his cost to the complete satisfaction of Yard. In case of any failure on his part to comply with the requirement, Yard will arrange the required cleaning entirely at the contractor's cost.
- 1.5. The firm / contractor shall be responsible for any damage caused to the material supplied by UCSL. Compensation with penalty for damage or loss of the item will be recovered from the Contractor, in the event of loss or damage. The responsibility is limited only with respect to the damages caused due to any mistake or negligence of contractor.

#### 4. INSPECTION

- 1.1. The vessel shall be built under the classification of BV Class.
- 1.2. Work will be undertaken and inspected as per the quality standards provided by UCSL, and approved by CLASS and Owner of the vessels.
- 1.3. The complete work has to be carried out under the survey of UCSL, CLASS and Owners. The works are to be inspected and approved by UCSL initially and thereafter presented to CLASS and the Owner for their survey and approval.
- 1.4. All test and Inspections shall be carried out as per approved Quality Plan.
- 1.5. All correspondence with the Shipyard to be in English language. All documents and plans to be in English language and in metric units.





### INDICATIVE QUANTUM OF WORK

			Otv	Testing			
SI. No.	TANK	Volume	Qty Nos	APT (Leak)	HPT (Structural)		
1	FOREPEAK	190.623	1	~	$\checkmark$		
2	DB TANK 1 SB	61.633	1	~	$\checkmark$		
3	DB TANK 1 PS	61.633	1	~	$\checkmark$		
4	DB TANK 2 SB	69.434	1	~	$\checkmark$		
5	DB TANK 2 PS	69.434	1	~	$\checkmark$		
6	DB TANK 3 SB	93.719	1	~	$\checkmark$		
7	DB TANK 3 PS	93.719	1	~	$\checkmark$		
8	DB TANK 4 SB	67.438	1	~	$\checkmark$		
9	DB TANK 4 PS	67.438	1	~	$\checkmark$		
10	DB TANK 5 SB	59.551	1	~	~		
11	DB TANK 5 PS	59.551	1	~	~		
12	SIDE TANK 1 SB	58.961	1	~	1		
13	SIDE TANK 1 PS	58.961	1	~	~		
14	SIDE TANK 2 SB	83.841	1	~	~		
15	SIDE TANK 2 PS	83.841	1	~	1		
16	SIDE TANK 3 SB	92.163	1	~	1		
17	SIDE TANK 3 PS	92.163	1	~	√		
18	SIDE TANK 4 SB	92.159	1	1	√		
19	SIDE TANK 4 PS	92.159	1	~	1		
20	SIDE TANK 5 SB	76.750	1	~	√		
21	SIDE TANK 5 PS	76.750	1	~	$\checkmark$		
22	AFTPEAK	68.750	1	~	√		
23	BUNKER SB MGO	77.047	1	~	√		
24	BUNKER PS MGO	77.047	1	~	1		

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			UCSL/	CC/T/W/009 Dt	11th November 2024
25	OVERFLOW TANK	11.219	1	~	$\checkmark$
26	DAYTANK 1 MGO	2.80	1	~	×
27	DAYTANK 2 MGO	3.90	1	~	×
28	EM. GEN MGO	0.60	1	~	×
29	FRESH WATER 1	13.059	1	~	×
30	FRESH WATER 2	10.586	1	~	×
31	FRESH WATER 3	18.23	1	1	×
32	UREA TANK	13.606	1	~	×
33	WASH WATER TANK	7.65	1	~	$\checkmark$
34	BILGE COLLECTING TANK	16.453	1	√	$\checkmark$
35	DIRTY OIL TANK	6.474	1	√	×
36	GREY WATER TANK	13.059	1	√	×
37	LUBE OIL TANK GEN.RM	2.99	1	√	×
38	BLACK WATER TANK	10.586	1	√	×
39	LUBE OIL TANK STERN TUBE	0.936	1	√	×
40	LUBE OIL TANK GEAR BOX	1.497	1	~	×
41	WASH WATER TANK	7.65	1	√	$\checkmark$
42	VOID ABOVE MGO SB	15.133	1	√	×
43	VOID ABOVE MGO PS	15.133	1	1	×
44	VOID DB PROP. ROOM	8.016	1	√	×
45	VOID PR	2.735	1	√	×
46	VOID SKEG	3.41	1	√	×
47	VOID 2 SKEG	4.753	1	√	×
48	VOID VALVES FWD	3.63	1	√	×
49	VOID VALVES AFT	3.63	1	~	×



#### Annexure IV

#### POWER OF ATTORNEY

(On Applicant's letter head)

(Date and Reference)

To The Assistant General Manager (Materials & Contract Cell) Udupi Cochin Shipyard Limited Fishing Harbour complex, Malpe, Udupi 576 108.

#### Subject: Power of Attorney

(Attested signature of Mr. .....)

For..... (Name & designation)

(Company Seal)





### PRICE BID FORMAT

SI.			Qty	Т	esting	Prio	ce/Tank	2	
No	TANK	Volume	Nos	APT	HPT	APT	HPT	Total Price	
•			1105	(Leak)	(Structural)	(Leak)	(Structural)		
1	FOREPEAK	190.623	1	1	V				
2	DB TANK 1 SB	61.633	1	1	~				
3	DB TANK 1 PS	61.633	1	1	~				
4	DB TANK 2 SB	69.434	1	1	~				
5	DB TANK 2 PS	69.434	1	~	1				
6	DB TANK 3 SB	93.719	1	1	~				
7	DB TANK 3 PS	93.719	1	~	1				
8	DB TANK 4 SB	67.438	1	1	~				
9	DB TANK 4 PS	67.438	1	1	1				
10	DB TANK 5 SB	59.551	1	1	1				
11	DB TANK 5 PS	59.551	1	1	~				
12	SIDE TANK 1 SB	58.961	1	1	1				
13	SIDE TANK 1 PS	58.961	1	1	1	0			
14	SIDE TANK 2 SB	83.841	1	1	~				
15	SIDE TANK 2 PS	83.841	1	~	~				
16	SIDE TANK 3 SB	92.163	1	~	√				
17	SIDE TANK 3 PS	92.163	1	1	1				
18	SIDE TANK 4 SB	92.159	1	~	1				
19	SIDE TANK 4 PS	92.159	1	~	1				
20	SIDE TANK 5 SB	76.750	1	~	1				
21	SIDE TANK 5 PS	76.750	1	1	1				
22	AFTPEAK	68.750	1	1	1				
23	BUNKER SB MGO	77.047	1	1	1				
24	BUNKER PS MGO	77.047	1	1	1				
25	OVERFLOW TANK	11.219	1	1	~		र्वे दीन शिपयाई		



					U	CSL/CC/T/W/041 Dt 11th Novem	ber 2024
26	DAYTANK 1 MGO	2.80	1	$\checkmark$	×	×	
27	DAYTANK 2 MGO	3.90	1	$\checkmark$	×	×	<u>.</u>
28	EM. GEN MGO	0.60	1	1	×	×	
29	FRESH WATER 1	13.059	1	~	×	×	
30	FRESH WATER 2	10.586	1	~	×	×	
31	FRESH WATER 3	18.23	1	~	×	×	
32	UREA TANK	13.606	1	$\checkmark$	×	×	
33	WASH WATER TANK	7.65	1	1	~		
34	BILGE COLLECTING TANK	16.453	1	$\checkmark$	$\checkmark$		
35	DIRTY OIL TANK	6.474	1	$\checkmark$	×	×	
36	GREY WATER TANK	13.059	1	1	×	×	
37	LUBE OIL TANK GEN.RM	2.99	1	$\checkmark$	×	×	
38	BLACK WATER TANK	10.586	1	$\checkmark$	×	×	
39	LUBE OIL TANK STERN TUBE	0.936	1	$\checkmark$	×	×	2
40	LUBE OIL TANK GEAR BOX	1.497	1	$\checkmark$	×	×	
41	WASH WATER TANK	7.65	1	$\checkmark$	1	199	
42	VOID ABOVE MGO SB	15.133	1	$\checkmark$	×	×	
43	VOID ABOVE MGO PS	15.133	1	$\checkmark$	×	×	-24 - 24
44	VOID DB PROP. ROOM	8.016	1	1	×	×	
45	VOID PR	2.735	1	$\checkmark$	×	×	
46	VOID SKEG	3.41	1	$\checkmark$	×	×	
47	VOID 2 SKEG	4.753	1	$\checkmark$	×	×	
48	VOID VALVES FWD	3.63	1	$\checkmark$	×	×	
49	VOID VALVES AFT	3.63	1	$\checkmark$	×	×	
50					·	TOTAL AMOUNT	
51						IGST/GST @	
52						Grand Total	

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Note:

- 1.1. Prices are to be quoted in the Pricing Format. The quotations to be submitted in the company letter head and forwarded to <u>contractcell@udupicsl.com</u>
- 1.2. Quotations shall be submitted as Password Protected File. The bidders are advised to share the password through only SMS while opening the quotations.
- 1.3. L1 will be determined based on the total amount at Sl. No.50





#### ANNEXURE-VII TECHNO COMMERCIAL CHECK LIST (To be submitted by the bidder)

(Bidders may confirm acceptance of the Tender Conditions/deviations if any to be specified)

SL No.	Tender Enquiry Requirements	Confirmation from bidder (Strike off whichever is not applicable)	Specific comments /Remarks
1	Terms & Condition, Scope of work & Indicative Quantum of Work. (Annexure-I, II & III)	Agreed as per tender /Do not agree	
2	Schedule Clause 6.1 ,6.2 & 6.3	Agreed as per tender/Do not agree	
3	Eligibility criteria documents	Submitted/Not submitted	
4	Unconditional Acceptance	Agreed as per tender/Do not agree	
5	Offer Validity	01 Year - Agreed as per tender/Do not agree	
6	Taxes & Duties	Specified/included in Price	
7	Payment terms - confirm		
a	As per Clause 10 of Annexure - I	Agreed as per tender/Do not agree	
8	Price shall remain firm and fixed and No Escalation in prices after awarding of contract	Agreed as per tender/Do not agree	
9	Security Deposit	Agreed as per tender/Do not agree	
10	Performance Guarantee	Agreed as per tender/Do not agree	
11	Force Majeure	Agreed as per tender/Do not agree	2
12	Liquidated damages and cancellation of contract	Agreed as per tender/Do not agree	
13	Arbitration & Jurisdiction clauses	Agreed as per tender/Do not agree	
14	Confirm all other terms and conditions of our enquiry are acceptable.	Confirmed/Not confirmed	
15	Deviations from Tender conditions	No Deviations	

Signature:

Address of the Contractor:



Seal:

### UNCONDITIONAL ACCEPTANCE LETTER

(Unconditional acceptance to be given by in letter head)

#### ACCEPTANCE OF TENDER CONDITIONS

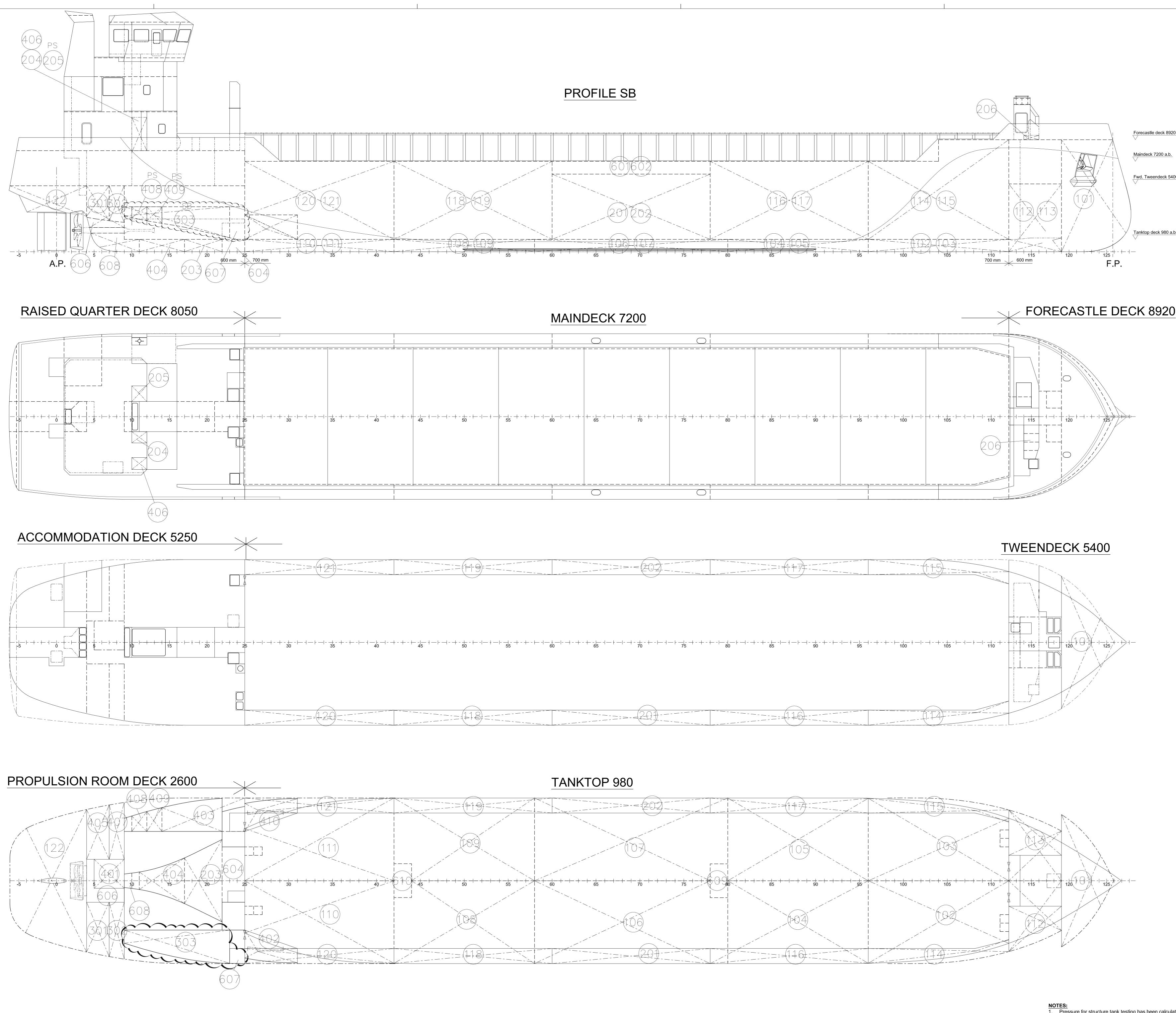
- Tender Document no. UCSL/CC/T/W/041, dated; 11<sup>th</sup> November 2024 Tender For Air Pressure Test (APT)/Hydro Pressure Test(HPT) Of Tanks On 3800 DWT General Cargo Vessel at UCSL has been received by me/us and I/We hereby unconditionally accept the tender conditions of tender documents in its entirety for the above work.
- 2. It is further noted that it is not permissible to put any remarks/conditions in the tender enclosed in "Part-2 (price bid)". I/We agree that the tender shall be rejected and ACCEPTING AUTHORITY.

Yours faithfully,

(Signature of the tenderer) with rubber stamp

Date: .....





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	Compartment	Shortname	IANKC Frame numbers	CAPACIT Capacity* Volume [m <sup>3</sup> ]	ES Testing	Pressure kN/m2	Testing Date	Remarks	Retesting Date	Sign Approval
	Ballast Water (ρ=1.025 t/m3) Forepeak	101	119 - FWD	190,623	structural /leak	114				
	DB Tank 1 SB DB Tank 1 PS	102 103	96 - 112 96 - 112	61,633 61,633	structural /leak structural /leak	97 97				
	DB Tank 2 SB DB Tank 2 PS	104 105	80 - 96 80 - 96	69,434 69,434	structural /leak structural	80 80				
	DB Tank 3 SB	106	58 - 80	93,719	/leak structural /leak	80				
	DB Tank 3 PS DB Tank 4 SB	107 108	58 - 80 42 - 58	93,719 67,438	structural /leak structural /leak	80 80				
20 a.b.	DB Tank 4 PS	109	42 - 58	67,438	structural /leak structural	80				
_	DB Tank 5 SB DB Tank 5 PS	110 111	25 - 42 25 - 42	59,551 59,551	/leak structural /leak	80 80				
400 a.b.	Sidetank 1 SB Sidetank 1 PS	112 113	112 - 119 112 - 119	58,961 58,961	structural /leak structural /leak	97 97				
	Sidetank 2 SB	114	96 - 112	83,841	structural /leak	114				
	Sidetank 2 PS Sidetank 3 SB	115 116	96 - 112 78 - 96	83,841 92,163	/leak structural /leak	114 96				
	Sidetank 3 PS	117	78 - 96	92,163	structural /leak structural	96				
<u>ı.b.</u>	Sidetank 4 SB Sidetank 4 PS	118 119	42 - 60 42 - 60	92,159 92,159	/leak structural /leak	96 96				
	Sidetank 5 SB Sidetank 5 PS	120 121	25 - 42 25 - 42	76,750 76,750	structural /leak structural	96 96				
	Aftpeak	122	Aft - 4	68,750	/leak structural /leak	89				
	<i>Fuel oil</i> (ρ= 0.89 t/m3) Bunker SB MGO	201	60 - 78	77,047	structural /leak	95				
)	Bunker PS MGO Overflow Tank	202 203	60 - 78 17 - 22	77,047 11,219	structural /leak structural /leak	95 93				
	Daytank 1 MGO Daytank 2 MGO	204 205	10 - 12 10 - 12	2.80 3.90	leak leak	20 20 20				
	Em.Gen MGO <i>Freshwater</i> (ρ=1.00 t/m3) Fresh Water 1	206 301	114 - 116 4 - 7	0.60 13,059	leak leak	20 20				
(	Fresh Water 2 Fresh Water 3 Miscellaneous	302 303	7-9 9-23	10,586 18,23	leak leak	20 20				$\sim$
	Mis <del>ce</del> llaneous Urea Tank (ρ=1.00 t/m3) Wash Water Tank (ρ=1.025 t/m3)	401 402	5 - 9 25 - 31	13,606 7,65	leak structural	20 80				
	Bilge collecting Tank (ρ=1.00 t/m3)	403	14 - 25	16,453	/leak structural /leak	95				
	Dirty oil Tank (ρ=1.00 t/m3) Grey water Tank (ρ=1.00 t/m3) Luboil Tank Gen.rm (ρ=0.92 t/m3)	404 405 406	11 -17 4 - 7 11 - 12	6,474 13,059 2.99	leak leak leak	20 20 20				
	Black water Tank (ρ=1.00 t/m3) Luboil Tank Sterntube (ρ=0.92 t/m3) Luboil Tank Gearbox (ρ=0.92 t/m3)	407 408 409	7 - 9 10-12 10-14	10,586 0,936 1,497	leak leak leak	20 20 20				
	Luboll Tank Gearbox (ρ=0.92 t/m3) Wash Water Tank (ρ=1.025 t/m3) Void	409 410	10-14 25 - 31	1,497 7,65	leak structural /leak	20 80				
	Void above MGO SB Void above MGO PS	601 602	60 - 78 60 - 78	15,113 15,113	leak leak	20 20				
(	Void DB prop. room Void Skeg Void PR	604 606 607	22 - 25 4 - 9 23 - 25	8,016 2.735 3,41	leak leak leak	20 20 20		$\sim$		$\sim$
	Void 2 skeg Void Valves fwd Void Valves aft	608 609 610	4 - 11 78 - 80 42 - 44	4,753 3.63 3.63	leak leak leak	20 20 20 20				
		Cor	npartment	I			Sti		sure P <sub>ST</sub> , in kN P <sub>ST</sub> = 10 [(Z <sub>top</sub> -	
	Double bottom tanks Double side tanks	The greater following:		$P_{ST} = 10 [(Z_{top} - Z) + 2,4]$ $P_{ST} = 10 (Z_{bd} - Z)$						
	Fuel oil tanks						The greater following:	of the	$P_{ST} = 10 [(Z_{top} - P_{ST} = 10 (Z_{bd} - Z_{bd} - $	z) + 2,4] z) + 0,1 P <sub>pv</sub> ]
	Cargo oil tanks						The greater following:	of the	$P_{ST} = 10 [(Z_{top} - P_{ST} = 10 [(Z_{top} - P_{S$	Z) + 2,4]
	Ballast holds of ships with service notation <b>bulk ca</b> combination carrier ESP	rrier, bulk car	rrier ESP,self-unloadin	g bulk carrier	ESP, ore carr	rier ESP or	The greater following:		P <sub>ST</sub> = 10 [(Z <sub>top</sub> - P <sub>ST</sub> = 10 (Z <sub>h</sub> - Z)	
	Ballast ducts						The greater following:	of the	P <sub>ST</sub> = 10 [(Z <sub>top</sub> - Ballast pump m	
	Deep tanks						The greater		Pressure P <sub>ST</sub> = 10 [(Z <sub>top</sub> -	
	Peak tanks						following:		$P_{ST} = 10 [(Z_{top} - D_{top})]$	
	Integral or independent cargo tanks of ships with se	rvice notation ch	nemical tanker				The greater following:		P <sub>ST</sub> = 10 [(Z <sub>top</sub> - P <sub>ST</sub> = 10 [(Z <sub>top</sub> -	
	Chain locker						$P_{ST} = 10 (Z_0)$ The greater		P <sub>ST</sub> = 10 [(Z <sub>top</sub> -	· Z) + 2,4]
	Fuel chemical tanks						The greater following:		P <sub>ST</sub> = 10 [(Z <sub>top</sub> - P <sub>ST</sub> = 10 [(Z <sub>top</sub> -	
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0124-10-2023HLH/AKIACUpdated Fresh WateREVDATEMADE BYAPPROVED BYDESCRIPTIONCOPYRIGHT CONOSHIP INTERNATIONAL BAll rights reserved. This document or any part thereof may not or disclosed, copied or otherwise reproduced or used in any form including, but not limited to, use hereof for the design and m identical, similar or derived designs, nor identical, similar or derived										
								rt thereof may r used in any fo the design an	not be made pu orm or by any me d manufacturin	
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, Pt B,	Ch 5, Sec 6, Tank testing design pressures		1:100	ZE: A0 ATE:		). UY16 APPROVE		ON: DATE:	01	SHEET: 1-1
			JK		02-2023				6-02-2023	-

**Purpose:** Purpose of this work instruction is to give the sequence of air pressure test being followed for leak detection of tanks.

- 1. **Pre-Requisite**: Before starting the air pressure test the following to be checked.
  - Dry Survey completion
  - All comments to be cleared
  - All piping & penetration to be welded.
  - Welding should be free from dust, grease, oil etc.
  - Silicate based shop primer if applied should be less than 40 microns thickness.
  - Boundary should be marked properly.

### 2. Equipment:

- Compressor & Air bottle
- Water column reading will be used for Air Pressure Test. Reading on water column to be measured as:
  - a) 10m water column reading 1 bar
  - b) 2m water column reading 0.2 bar
  - c) 1.5m water column reading 0.15 bar
- 3. Things to be checked: During Air Pressure test following to be checked:
  - Pressure on water column.
  - Leakage on the welding joint of boundaries of Tank / Penetration.
- 4. **Procedure:** The following procedure should be followed during Air Pressure Test.
  - The Air pressure shall be kept at a maximum pressure of 20KN/m2 (0.2 bar before 1 hr and shall be reduced to 15 KN/m2 (0.15 bar) before inspection
  - Soap solution should be applied on weld joints during checkup.
  - Check for leaks on all the boundaries of tanks & penetration
  - In addition to that safety valve on manhole covers or a reliable equivalent alternative, shall be connected to the compartment being tested.



### 5. Corrective Measures & Repair procedures:

- If leakage observed, mark the area and release the pressure gradually up to zero
- Open the man hole.
- Grinding of marked location on both side
- Welding from one side
- Back gouging and welding from other side

Prepared by	Checked by	Approved by	Issued by					
Gopal Mahto	Ganesh Samaga,	Billu C. Rajan	Billu C. Rajan					
AM (Electrical QC)	Manager (QC)	AGM (U&M, QC, HSE) & MR	AGM (U&M, QC, HSE) & MR					



**Purpose:** To Describe a procedure for carrying out structural testing of tanks as per applicable standard.

**Scope:** As per tank testing plan

### Procedure:

- 1. Testing to be carried out after Dry Survey.
- 2. Clean and do visual inspection of all boundaries / weld surface prior to testing.
- 3. Check proper support/ blocks under the ship to ensure it could carry the additional weight of water if the structural testing is not carried out in floating condition.
- 4. Close all openings associated with the compartment (i.e., Manhole, drain plugs, piping etc.) except overflow/ air pipe & filling line.
- 5. Connect the water pump with the filling line of the compartment or by any alternative arrangement.
- 6. Fill up the water gradually to the greater of the following
  - Head of water up to top of overflow
  - 2.4m head of water above highest point of tank. For FRP tanks: 1.0m above highest point of tank
  - Pressure valve opening pressure
- 7. The rate of filling should never exceed the capacity of the venting of air.
- 8. Keep in the same pressure for one hour and check the water level.
- 9. Check the boundary/ structure for any leaks or deformation.
- 10. If found satisfactory, release the water slowly through the delivery line or by suitable means.
- 11. If any repair is to be carried out, ensure that there is no water on other side of affected area.
- 12. After repairs, repeat the test to ensure water tightness.

**Note:** Variation to the arrangements mentioned in the procedure can be permitted case to case basis, if needed as mandated by site condition.

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AM (Electrical QC)	Manager (QC)	AGM (U&M, QC, HSE) & MR	AGM (U&M, QC, HSE) & MR