

SEPARATE QUOTATIONS REQUIRED FOR ATTACHED 46 x IT SPECIFICATIONS

IT NO : IT/46/01/2024-25

| IT SPECIFICATION FOR REPAIR/ MAINTENANCE OF AIR CONDITIONING SYSTEM PMSS-SABQAT | | |
|--|--|---|
| 1. | Parent Equipment | Air Conditioning System |
| 2. | Sub Equipment | AC Condenser, Compressor, AC Dryer, AC Seawater lines |
| 3. | Assembly Component | AHU Evaporators and system lines |
| 4. | Make | Carrier |
| 5. | Model | USA |
| 6. | Justification PMS/Failure/ F.W.T etc. | i.e AC plant performance degraded |
| 7. | Work required/ defect | Repair/ maintenance & replacement of AC Condenser, Compressor, AC Dryer & AC seawater lines |
| 8. | Detailed scope of work | a. Scope of work includes following works b. Inspection and replacement of condenser unit c. Inspection and servicing of compressor d. Inspection and flushing of all AHU evaporators and AC system lines e. Replacement of AC system seawater lines f. Replace any part if deemed necessary g. Make system leakage free fill nitrogen for 24 hour h. Create vacuum up to 29 inches of mercury to ascertain the sign of leakage and evacuation of air from system for 24 hour i. Charging of R-22 Honey well gas j. Any damage occurs during the course of inspection work will be done by firm without any liability/ responsibility on part of the ship/PMSA k. Requirement of external services if any will be responsibility of the firm without any liability on the part of ship l. Repaired/ defective items are to be handover to ship staff m. Cutting/ brazing work is to be carried out where required |
| 9. | Technical Specification | Nil |
| 10. | Material | Copper Nickel |
| 11. | Eligibilities | a. The firm should be NTN/GST registered. b. Reputable local contractor/OEM rep. |
| 12. | EDC/EDD | 14 working days |
| 13. | Warranty | 01 year |
| 14. | Acceptance Criteria (if any) | a. Only OEM recommended item will be accepted after inspection b. Detail specification of item must be endorsed on packing i.e Part No/Data of manufacturing. |
| 15. | Any other relevant information | NA |

IT NO : IT/46/02/2024-25

IT SPECIFICATION FOR PURCHASE OF CERMONIAL DRESSING LINE WITH 69 X UNFITTED FLAGS – PMSS ZHOE

| S NO | Description | |
|------|--------------------------|--|
| 1. | Parent Equipment/ System | Ceremonial Dressing Line with unfitted flags |
| 2. | Sub Equipment | - |
| 3. | Assembly/ Equipment | - |
| 4. | Make | PAKISTANI |
| 5. | Model | - |
| 6. | Qty | 69 x Flags in 2BD 70 x Meters Ropes |
| 7. | Justification | In this regard, Ceremonial Dressing Line with unfitted flags are essentially required onboard for ceremonial activities. |
| 8. | Work Required | - |
| 9. | Detailed Scope of Works | - |
| 10. | Technical Specs | Firm should be Physically check as previous |
| 11. | Eligibility | The Firm should be NTN/GST Registered |
| 12. | EDD | 10 days |
| 13. | Warranty | 3 years |
| 14. | Acceptance Criteria | As per IT Specification |
| 15. | Any other information | - |

IT NO : IT/46/03/2024-25

IT SPECIFICATIONS FOR REPAIR/ REPLACEMENT OF EVAPORATOR AND COMPRESSOR OF AIR CONDITIONING PLANT NO 4 – PMSS BASOL

| S No. | Description | |
|-------|--------------------------|---|
| 1. | Parent Equipment | Air Conditioning System JTLS-168 (IV) Marine Light Water Chiller |
| 2. | Sub Equipment | Evaporator & Compressor |
| 3. | Assembly component | Hermetically Sealed Compressor (Model ZR190KCE-TFD with Oil Heater) Part No. 06.01.057 Plate Heat Exchanger (Model V80HX60) Part 03.02.05.085 |
| 4. | Make | Jiangsu Josun Air Conditioner Co., Ltd |
| 5. | Model | JTLS-42 (I) Water Chiller Module |
| 6. | Qty | 1 x Evaporator & 1 x Compressor |
| 7. | Justification | Chilled water ingress observed in HP valve of AC plant no 4 |
| 8. | Work required/ Defect | Repair/ replacement of 1 x hermetically sealed compressor Repair / replacement of 1 x plate heat exchanger |
| 9. | Detailed Scope of Work | a. Removal of evaporator and compressor and blanking of cooling lines. b. Installation of 1 x hermetically sealed compressor c. Installation of 1 x evaporator after pressure testing. d. 24 hour Nitrogen gas pressure test of the system for identification of any leakages. e. System Gas charging (R-404A) by contractor after leakage verification. f. Satisfactory test/ trials of evaporator and compressor without high noise/ vibration. g. All tools and test equipment will be arranged by firm/ contractor. |
| 10. | Technical specifications | As per OEM Manual/ Specifications |
| 11. | Eligibility Criteria | Reputable firm having working experience of Chiller Plant repairs onboard HINGOL Class ships. |
| 12. | EDC | 7 x Days |
| 13. | Warranty | One Year warranty of evaporator and compressor after test/ trials or as recommended by OEM without following defects: a. Satisfactory operation without high vibration/ noise. b. Satisfactory operation without refrigerant leakage. |
| 14. | Acceptance Criteria | a. Only OEM certified spares may be used. b. Upon scrutiny of item and provided documents i.e. technical specifications. |
| 15. | Any other Information | a. Damage/ defect occurred to system during work will be responsibility of contractor. b. Dismantling/ assembling/ installation and in way removal work will be responsibility of contractor. |

IT SPECIFICATIONS FOR REPAIR/ REPLACEMENT OF 46 x SEA WATER & MISC LINES – PMSA

| S No. | Description | | | | | | |
|-------|------------------------|---|------------------------|---|---|---------------------|----------|
| 1. | Parent Equipment | Fresh water supply system, Fuel system and Seawater Cooling System i. | | | | | |
| 2. | Sub-equipment | Gearbox, Stern Seal, Tunnel Compartment and Main Fridge | | | | | |
| 3. | Assembly equipment | Pipe lines | | | | | |
| 4. | Make | CSTC | | | | | |
| 5. | Model | N/A | | | | | |
| 6. | Quantity | 46 lines | | | | | |
| 7. | Justification | EMP work package | | | | | |
| 8. | Work required | Repair/ replacement of 46 x lines | | | | | |
| 9. | Detailed scope of work | Repair/ replacement of following 46 x pipe lines: | | | | | |
| | | S No | Compartment/ System | Description | Size (L x OD) with Material | Elbow/ Tee | Flange |
| | | a. | Tunnel Compartment | 04 x Aux cooling lines | L- 05ft, Ø- 1 inch Cu-Ni | - | 08 |
| | | b. | Main A/C | 01 x Sea chest suction line | L- 3.5ft, Ø- 4 inch Cu-Ni | - | 02 |
| | | c. | Flushing system | 03 x Seawater lines | As per sample 2 x (L:4ft, Ø: 1") 1 x (L:3.5ft, Ø: 1.5") Cu-Ni | | 02 01 |
| | | d. | Refrigeration system | 04 x Seawater inlet & outlet lines | L- 12ft, Ø- 1 inch Cu-Ni | 12 Bend 12 Tee's | 14 |
| | | e. | Fuel system | 02 x Fuel Tank No.1 suction lines | L- 03ft, Ø- 4 inch Cu-Ni | - | 04 |
| | | f. | Fresh water | 01 x pipe line of fresh water system | L- 05ft, Ø- 3 inch SS | 02 Bend | 02 |
| | | g. | Pneumatic system | 04 x pneumatic lines for inflatable seals | L- 12ft, Ø- 1 inch (each line) Cu-Ni | - | 08 |
| | | h. | Stern Seals SW Cooling | 04 x Seawater supply lines in shaft | L- 10ft, Ø- 1 inch (each line) SS | 08 Bend | 08 |

| | | | | | | | | |
|-----|-----------------------|---|---|--|---|---------|--------------|--|
| | | j. | Daily Bilge pump | tunnel compartment 05 x bilge pump suction lines in Aft Engine Room | L:45ft, Ø- 1.5inch (each line) Cu-Ni | 08 Bend | 10 | |
| | | k. | Gearbox Cooler | 04 x Cooler Inlet & outlet lines | As per sample (L:3ft, Ø: 1.25") Flexible hose | - | 04 Adapt ers | |
| | | l. | Auxiliary cooling system | 02 x Seawater supply lines | L:07ft, Ø- 2inch (each line) Cu-Ni | 07 Bend | 04 | |
| | | m. | Gauges | 12 x gauge lines | L:02ft, Ø- .1/2 inch (each line) Cu-Ni | - | 24 | |
| | | a. | Lines are to be replaced with recommended material. | | | | | |
| | | b. | Dismantling and installation would be carried out by contractor along with installation of blank plates (where required). | | | | | |
| | | c. | Lines are to be properly aligned; loose fit will be rejected. | | | | | |
| | | d. | Rusty nut & bolts are to be replaced by SS nut bolts. | | | | | |
| | | e. | Satisfactory operation during HATs & SATs. | | | | | |
| | | f. | Pressure testing at 8 bar (for leakage free verification). | | | | | |
| | | g. | All spares, tools and material is to be arranged by the firm. | | | | | |
| | | h. | Any growth work/ damage will be soul responsibility of the firm. | | | | | |
| 10. | Technical specs | As per OEM Manual/ Specs | | | | | | |
| 11. | Eligibility criteria | Reputable local contractor having relevant working experience in PMSA | | | | | | |
| 12. | EDC | 15 days | | | | | | |
| 13. | Warranty | One year after satisfactory repair/ replacement work without leakage or defects | | | | | | |
| 14. | Acceptance criteria | Smooth/ obstruction free and leakage free operation of lines | | | | | | |
| | Any other information | Firms are to visit site before quoting to fully understand scope of work | | | | | | |

IT NO : IT/46/05/2024-25

| IT SPECS FOR REPAIR/ REPLACEMENT OF SSDG NO 1 CONTROL MODULE | | |
|---|-------------------------|---|
| PMSS BARKAT | | |
| 1 | Ship's Name | PMSS BARKAT |
| 2 | Parent equipment/system | Power Generation and Distribution |
| 3 | Sub equipment | SSDG No 1 |
| 4 | Assembly/ equipment | Monitoring & Control Module |
| 5 | Make | MEBAY |
| 6 | Model | DC 70D Version 12.38 |
| 7 | Qty | 01 |
| 8 | Justification | Monitoring & control module malfunctioning during no operation showing erratic reading of parameters, switch not functioning properly. |
| 9 | Work required | Repair/ replacement of Control module. |
| 10 | Detailed scope of work | a. Repair/ replacement of control module. b. Feed all safeties, alarms and trips limit. c. Repair/ renewal of wires, lugs switches to be carried out. |
| 11 | Technical spec | a. 380VAC Main supply b. 24VDC Control Supply |
| 12 | Eligibilities | a. The firm must visit onboard and carry diagnoses/inspections to establish the extent of required work. b. The firm must have sufficient experience of such kind of work and experienced. c. The firm should be NTN /GST registered. |
| 13 | EDC | 07 x days after issuance of work/confirmation order |
| 14 | Warranty | 01 Year |
| 15 | Acceptance criteria | a. Satisfactory work done by the firm. b. Satisfactory trials. c. Acceptance by the end user. |

IT NO : IT/46/06/2024-25

PMSS KASHMIR

| IT SPECIFICATION: CALIBRATION AND REPAIR/ REPLACEMENT OF METER & GAUGES | | |
|--|--------------------------------|---|
| 1 | System | Propulsion and Auxiliary Machinery |
| 2 | Sub system | Misc |
| 3 | Assembly Compartment | Meters & Gauges |
| 4 | Make | Misc |
| 5 | Model | Misc |
| 6 | Quantity | 227 |
| 7 | Justification | PMS Routine |
| 8 | Work Required/ Defect | Calibration and repair/ replacement of Meter & Gauges |
| 9 | Scope of Work | Following work to be carried out: a. Dismantling of all gauges and meters as per provided parameters. b. Calibration of 85 meters. c. Calibration of 105 gauges. d. Repair/ replacement of 20 x meters. e. Repair/ replacement of 17 x gauges. f. Installation of all meter & gauges. g. Spare to be provided by firm. h. Any growth work will be bear by firm. |
| 10 | Technical Specs | As per installed items |
| 11 | Eligibilities | a. Have experience to work for ships (preferably PMSA ships) b. Company must be certified with HQ PMSA c. Company must be Income and Sales tax d. Calibration certification of any reputable firm to be provided by firm. |
| 12 | EDC | 01 x month after award of contract |
| 13 | Warranty | 02 x years |
| 14 | Acceptance Criteria (if any) | Item will be accepted after satisfactory performance of for 15 days at sea |
| 15 | Any other relevant information | Contact Ship staff (Cell # 0321-3000503) |

IT NO : IT/46/07/2024-25

| IT SPECIFICATION - REPAIR/ REPLACEMENT OF NIGHT VISION SYSTEM | | |
|--|--------------------------------|--|
| OUTBOARD DIRECTION INDICATOR UNIT - PMSS KASHMIR | | |
| S No. | Description | |
| 1. | Parent Equipment | Night Vision System (NVS) |
| 2. | Sub Equipment | Outboard direction indicator (PTZ & Thermal IR Camera) |
| 3. | Make | China |
| 4. | Model | GHGD-60 Night Vision System |
| 5. | Qty | 01 |
| 6. | Justification PMS/Failure/FWT | Failure: NVS is degraded i.e IR and PTZ Cameras are defective and repairs required to be repair. |
| 7. | Work required/ Defect | NVS is degraded i.e IR and PTZ Cameras are defective. Both cameras are unable to show any video/ picture. Therefore repair of IR & PTZ Camera is required. |
| 8. | Detailed Scope of Work | Repairing of defective PTZ and IR Camera is required for operationalization of Night Vision System onboard. |
| 9. | Technical specs | a. Lens: Focal length: 10mm-200mm manually adjustable b. Infrared Thermal Imager: Focal length: 125mm Aperture: F1.0 c. System parameters: MTBF (mean time before failure) 500hrs Range of Movement: horizontal 360 continuous rotation, vertical -90 to 90 degree d. Laser Illuminator: Power: 10W Wave length: 810nm±10nm e. Daylight cameras: high sensitivity color/black and white video camera f. Imaging device: CCD Signal to Noise Ratio: 48Db g. Power Supply: AC 220 60/50 h. System power consumption: 600W |
| 10. | Eligibility Criteria | Reputable local contractor having working experience with PMSA/ OEM authorized reps will be given preference. |
| 11. | EDC/ EDD | 10 x days |
| 12. | Warranty | 12 x Months |
| 13. | Acceptance Criteria | a. Item will be accepted after satisfactory test/ trials onboard. b. OEM Technical documents/ warranty certificate of items required. |
| 14. | Any other relevant information | Firm must visit onboard for clarification of any query and understanding of requirement before quoting. |

IT NO : IT/46/08/2024-25

IT SPECIFICATION FOR REPAIR/ REPLACEMENT OF IC-M802 HF MARINE TRANSCEIVER - PMSS NUSRAT

| S No | IT Specification | |
|------|--------------------------|--|
| 1. | Parent Equipment/ System | IC-M802 HF Marine Transceiver |
| 2. | Sub Equipment/ system | IC-M802 HF Marine Transceiver |
| 3. | Assembly/Equipment | - |
| 4. | Make | ICOM JAPAN |
| 5. | Model | IC-M802 HF Marine Transceiver |
| 6. | Qty | 01 |
| 7. | Justification | Item is required for ship's operational communication requirement |
| 8. | Work Required | Repair/ Replacement of IC-M802 HF Marine Transceiver |
| 9. | Detailed Scope of Works | Following Scope of work: a. Repair/ replacement of IC-M802 HF Marine Transceiver b. Ensuring satisfactory operation of IC-M802 HF Marine Transceiver c. Provision of all necessary accessories for SAT Ops d. Complete onboard trials/ set to work in TX/RX Mode e. Growth work will be sole responsibility of the firm f. Cable rigging to be made concealed with aid of appropriate measures |
| 10. | Technical Spec | IC-M802 HF Marine Transceiver: a. Max Power output 150 watt b. Frequency Range 0.5 to 30 MHz c. Power supply 13.6VDC±15 30Amp with input voltage 230VAC d. Operating Temperature: -20 - 55C |
| 11. | Eligibilities | a. As per TSR b. The firm should visit onboard and assess the extent of required work. c. The firm should be having good experience in repair/maintenance of such system/ equipment d. The firm should be NTN /GST registered |
| 12. | EDC | 07 x working days after issuance of work order. |
| 13. | Warranty | 01 Year |
| 14. | Acceptance criteria | Satisfactory Harbor/Sea trials upon completion of work |

IT NO : IT/46/09/2024-25

IT SPECIFICATION FOR REPAIR/ REPLACEMENT OF DIESEL GENERATORS SPARES - PMSS KOLACHI

| 1. | Parent Equipment | Power Generation and Distribution | | | | | | | | | | | | | | | | | | | | |
|-------|----------------------------|---|--------------|-------------|-------------|--------------|----|-----------------|---------------------|----|----|----------------|---------------------------------|----|----|----------------|-------------------------|----|----|----------------------------|--|----|
| 2. | Sub Equipment | Diesel Generator | | | | | | | | | | | | | | | | | | | | |
| 3. | Assembly Component | Filters | | | | | | | | | | | | | | | | | | | | |
| 4. | Make | Cummins China | | | | | | | | | | | | | | | | | | | | |
| 5. | Model | KTA-19 | | | | | | | | | | | | | | | | | | | | |
| 6. | Required Quantity | As mentioned in scope of work | | | | | | | | | | | | | | | | | | | | |
| 7. | Justification | Repair/ replacement of filters to conduct PMS routine | | | | | | | | | | | | | | | | | | | | |
| 8. | Work Required | Repair/ replacement of filters of Diesel Generators installed onboard | | | | | | | | | | | | | | | | | | | | |
| 9. | Detailed scope of work | Repair/ replacement of filters are as per following requirements: | | | | | | | | | | | | | | | | | | | | |
| | | <table border="1"> <thead> <tr> <th>S No.</th> <th>Part number</th> <th>Description</th> <th>Qty required</th> </tr> </thead> <tbody> <tr> <td>a.</td> <td>3315843/ F51212</td> <td>Cummins fuel filter</td> <td>16</td> </tr> <tr> <td>b.</td> <td>3889310/ LF870</td> <td>Cummins lube oil filter element</td> <td>16</td> </tr> <tr> <td>c.</td> <td>3889311/ LF777</td> <td>Cummins lube oil filter</td> <td>08</td> </tr> <tr> <td>d.</td> <td>CCFJ400J-KC0801/ 2020PM-OR</td> <td>Cummins duplex water separator filters</td> <td>16</td> </tr> </tbody> </table> | S No. | Part number | Description | Qty required | a. | 3315843/ F51212 | Cummins fuel filter | 16 | b. | 3889310/ LF870 | Cummins lube oil filter element | 16 | c. | 3889311/ LF777 | Cummins lube oil filter | 08 | d. | CCFJ400J-KC0801/ 2020PM-OR | Cummins duplex water separator filters | 16 |
| S No. | Part number | Description | Qty required | | | | | | | | | | | | | | | | | | | |
| a. | 3315843/ F51212 | Cummins fuel filter | 16 | | | | | | | | | | | | | | | | | | | |
| b. | 3889310/ LF870 | Cummins lube oil filter element | 16 | | | | | | | | | | | | | | | | | | | |
| c. | 3889311/ LF777 | Cummins lube oil filter | 08 | | | | | | | | | | | | | | | | | | | |
| d. | CCFJ400J-KC0801/ 2020PM-OR | Cummins duplex water separator filters | 16 | | | | | | | | | | | | | | | | | | | |
| 10. | Technical Specification | Filters should be original Cummins OEM | | | | | | | | | | | | | | | | | | | | |
| 11. | Eligibilities | Any local contractor affiliated with PMSA | | | | | | | | | | | | | | | | | | | | |
| 12. | EDC/ EDDs | 02 x weeks after confirmation of order | | | | | | | | | | | | | | | | | | | | |
| 13. | Warranty | 01 Year Shelf life | | | | | | | | | | | | | | | | | | | | |
| 14. | Acceptance Criteria (if | Specification should be as per requirement | | | | | | | | | | | | | | | | | | | | |
| 15. | Any other relevant info | Contact MEO (Cell No 03338948563) | | | | | | | | | | | | | | | | | | | | |

IT NO : IT/46/10/2024-25

IT SPECS FOR REPAIR/REPLACEMENT OF CONTROL MODULE OF FSME PMSS BARKAT

| | | |
|-----|-------------------------|--|
| 1. | Ship's Name | PMSS BARKAT |
| 2. | Parent equipment/system | FWD STBD MAIN ENGINE |
| 3. | Sub equipment | Engine Control System |
| 4. | Assembly/ equipment | Control Module ✓ |
| 5. | Make | Mebay |
| 6. | Model | DC 40D MKII |
| 7. | Qty | 01 X Control Module |
| 8. | Justification | Forward STBD Main engine control module found observed malfunctioning during SOC's Main engine failed to start/ stop. |
| 9. | Work required | FSME control module defect to be rectified by repairing/ replacing for SAT operation of the system |
| 10. | Detailed scope of work | Following work is required to be undertaken for the repair/ replacement of control system. a. Repair/ Replacement of control module. b. Feed all safeties, alarms and trip limit. c. Repair/ replacement of wires, lugs, switches, to be carried out. d. All cables should be marked properly w.r.t control diagram. e. All associated cable of engine control system and supplies should be properly secured as per marine standard. f. Any work during warranty/ guarantee period required will the responsibility of the firm. g. The firm will be arranged all spares, tools, accessories etc required for said job. h. The firm will be responsible for any damage/ defect/wear tear occurred during the repair/ replacement. j. Requirement of external services, if required will be responsibility of firm k. The firm will be responsible for repair and replacement work as per standard SOPs/ OEM Manual. |
| 11. | Technical spec | 27V DC |
| 12. | Eligibilities | a. The firm must visit onboard and carry out diagnoses/inspections to establish the extent of required work. b. The firm must have sufficient experience of same kind of work and experienced. c. The firm should be NTN /GST registered |
| 13. | EDC | 07 x days after issuance of work/confirmation order |
| 14. | Warranty | 01 Year after acceptance. |
| 15. | Acceptance criteria | Acceptance by the ship staff |

IT NO : IT/46/11/2024-25

ITEM SPECIFICATIONS OF SENTRY POST (MR) – PMSS INDUS

| S No | Description | Provision of material for re-construction of roof of security tower | | | | | | | | | | | | | | | | | | |
|------|--------------------------------|--|------|-------|-----|----|-----------|--------|----|------|---------|----|-------|---------|----|-------------|--------|----|--------------|------|
| 13. | Requirement/ Scope of Work | <table border="1"> <thead> <tr> <th>S No</th> <th>Items</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>d.</td> <td>SR Cement</td> <td>36 bag</td> </tr> <tr> <td>e.</td> <td>Sand</td> <td>550 SFT</td> </tr> <tr> <td>f.</td> <td>Crush</td> <td>400 SFT</td> </tr> <tr> <td>g.</td> <td>Steel ½ & ¼</td> <td>120 Kg</td> </tr> <tr> <td>h.</td> <td>Binding Wire</td> <td>3 Kg</td> </tr> </tbody> </table> | S No | Items | Qty | d. | SR Cement | 36 bag | e. | Sand | 550 SFT | f. | Crush | 400 SFT | g. | Steel ½ & ¼ | 120 Kg | h. | Binding Wire | 3 Kg |
| S No | Items | Qty | | | | | | | | | | | | | | | | | | |
| d. | SR Cement | 36 bag | | | | | | | | | | | | | | | | | | |
| e. | Sand | 550 SFT | | | | | | | | | | | | | | | | | | |
| f. | Crush | 400 SFT | | | | | | | | | | | | | | | | | | |
| g. | Steel ½ & ¼ | 120 Kg | | | | | | | | | | | | | | | | | | |
| h. | Binding Wire | 3 Kg | | | | | | | | | | | | | | | | | | |
| 14. | Eligibilities | All reputable ISSI registered firms/ contractors/ suppliers. | | | | | | | | | | | | | | | | | | |
| 15. | EDC | 05 Days | | | | | | | | | | | | | | | | | | |
| 16. | Acceptance Criteria | Inspection by end user | | | | | | | | | | | | | | | | | | |
| 17. | Any other relevant information | In case of any query, contact EXO PMSS INDUS 021-48505-456 | | | | | | | | | | | | | | | | | | |
| 18. | Terms of payment | 100% After work Completion | | | | | | | | | | | | | | | | | | |

IT NO : IT/46/12/2024-25

IT SPECIFICATIONS – REPAIR/ REPLACEMENT OF PORTABLE FUEL TANKS FOR 02 X SSBs (241 & 243) – EASTERN WING

| 1. | Ship's Name | SSBs (241 & 243) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|---|---|------|-------------|---------|----|----------------------------|----|----|----------|----|----|------------------|----|----|-------------|----|----|------------------|------|----|------------------------------|---------|----|--------------|---------|----|---------------|----|----|--------|----|
| 2. | Parent Equipment | Fuel System | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | Sub Equipment | Portable Fuel Tank | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. | Assembly Component | As Above | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. | Make | AJ Marine Engineering and Services | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. | Model | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. | Qty | 02 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. | Justification i.e PMS/ Failure/ FWT etc | Repair/ replacement of 02 x portable fuel tanks of SSBs (241 & 243) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. | Work Required/ Defect | Repair/ replacement of portable fuel tanks for 02 x SSBs (241 & 243) (As mentioned in S No 11 below) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. | Detailed scope of work | Repair/ replacement of portable fuel tanks for 02 x SSBs (241 & 243) (As mentioned in S No 11 below) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. | Technical Spec | <table border="1"> <thead> <tr> <th>S No</th> <th>Description</th> <th>Req Qty</th> </tr> </thead> <tbody> <tr> <td>a.</td> <td>Fuel Tank SS-316, 200 Ltrs</td> <td>01</td> </tr> <tr> <td>b.</td> <td>Air Vent</td> <td>01</td> </tr> <tr> <td>c.</td> <td>Fuel Filling Cap</td> <td>01</td> </tr> <tr> <td>d.</td> <td>Drain valve</td> <td>01</td> </tr> <tr> <td>e.</td> <td>PVC Pipe Fitting</td> <td>07ft</td> </tr> <tr> <td>f.</td> <td>GRP Setting with Top Caution</td> <td>01 Unit</td> </tr> <tr> <td>g.</td> <td>Suction Pipe</td> <td>(01)7ft</td> </tr> <tr> <td>h.</td> <td>Jubilee Clamp</td> <td>08</td> </tr> <tr> <td>i.</td> <td>Socket</td> <td>04</td> </tr> </tbody> </table> | S No | Description | Req Qty | a. | Fuel Tank SS-316, 200 Ltrs | 01 | b. | Air Vent | 01 | c. | Fuel Filling Cap | 01 | d. | Drain valve | 01 | e. | PVC Pipe Fitting | 07ft | f. | GRP Setting with Top Caution | 01 Unit | g. | Suction Pipe | (01)7ft | h. | Jubilee Clamp | 08 | i. | Socket | 04 |
| S No | Description | Req Qty | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| a. | Fuel Tank SS-316, 200 Ltrs | 01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| b. | Air Vent | 01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| c. | Fuel Filling Cap | 01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| d. | Drain valve | 01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| e. | PVC Pipe Fitting | 07ft | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| f. | GRP Setting with Top Caution | 01 Unit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| g. | Suction Pipe | (01)7ft | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| h. | Jubilee Clamp | 08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| i. | Socket | 04 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12. | Eligibility Criteria | Any well reputed local/ international firm having experience for repair though replacement of Portable fuel Tanks for small boats | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13. | EDC | 15 Days | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14. | Warranty | 01 x Year after completion of work. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15. | Acceptance Criteria | > Inspection of all replaced parts by end user. > Successful trials by end user after onboard installation. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16. | Any other relevant information | Contracted firm is to ensure replacement of marine grade Portable fuel Tanks. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

IT NO : IT/46/13/2024-25

CALIBRATION OF 170 X GAUGES & METERS – PMSS BASOL

| S No | Description |
|------|------------------------|
| 1. | Parent Equipment |
| 2. | Sub Equipment |
| 3. | Assembly Component |
| 4. | Make |
| 5. | Model |
| 6. | Quantity |
| 7. | Justification |
| 8. | Work required |
| 9. | Technical Specs |
| 10. | Detailed scope of Work |
| 11. | Eligibilities |
| 12. | EDC |
| 13. | Warranty |

Pressure/ temperature gauges & electrical meters

China

NA

170 x gauges and meters mentioned as per attached list need to be calibrated.

Calibration required for SAT ops

As above

As per OEM technical manual.

a. Removal/ installation and isolation of system whose gauges are being removed for calibration.

b. All gauges/ meters are to be tested prior removal. All operational gauges/ meters are to be returned in operational state.

c. Calibration/ repair of defective gauges is responsibility of contractor.

d. Any gauge/ meters which becomes defective during calibration is to be replaced by contractor.

e. Brazing work of associated gauges/ meter lines where required is responsibility of contractor.

f. Zoning of gauges as per the requirement of SS.

g. Provision of calibration certificate of every gauge/ meter.

h. Conduct of harbour and sea trials.

a. Contractor is to visit the ship prior participation in job to quantify the number of gauges/ meters, repair/ brazing work (if required).

b. Contractor is to mention/ verify the testing facility being utilized for calibration of gauges.

14 Days

01 year warranty for leakages from associated fittings/ lines of gauges/ meters. Contractor is to rectify any leakage defect from gauge upon reporting of defect by ship staff.

Upon completion of work and successful HATs & SATs

Acceptance Criteria (if any)

Any other information

Visit onboard for detailed understanding of work.

IT NO : IT/46/14/2024-25

| IT SPECIFICATIONS - REPAIR/ REPLACEMENT OF PID MODULES OF MAIN SWITCHBOARD - PMSS KASHMIR | | | | | | | | | | | | |
|--|--|--|-----------------|---------------|---------------|---------|---------------|----------|-------------|----|------|--------|
| 1. | Parent Equipment | Ships Power Distribution System | | | | | | | | | | |
| 2. | Sub Equipment | Switchboards | | | | | | | | | | |
| 3. | Assembly Component | PID Modules | | | | | | | | | | |
| 4. | Make | SACE ABB | | | | | | | | | | |
| 5. | Model | LSI R630 | | | | | | | | | | |
| 6. | Quantity | 02 | | | | | | | | | | |
| 7. | Justification i.e PMS/ Failure/ FWT etc | FWT | | | | | | | | | | |
| 8. | Work Required/ Defect | Repair/ replacement of 02 x PID modules of switchboard | | | | | | | | | | |
| 9. | Detailed scope of work | Repair/ replacement of 02 x PID modules of switchboard | | | | | | | | | | |
| 10. | Technical specs | <table border="1"><tr><td>Part No/Patt No</td><td>2040PV3040016</td></tr><tr><td>Ampere rating</td><td>630 Amp</td></tr><tr><td>Rated voltage</td><td>AC 400 V</td></tr><tr><td>No of Poles</td><td>03</td></tr><tr><td>MTBF</td><td>≥5000h</td></tr></table> | Part No/Patt No | 2040PV3040016 | Ampere rating | 630 Amp | Rated voltage | AC 400 V | No of Poles | 03 | MTBF | ≥5000h |
| Part No/Patt No | 2040PV3040016 | | | | | | | | | | | |
| Ampere rating | 630 Amp | | | | | | | | | | | |
| Rated voltage | AC 400 V | | | | | | | | | | | |
| No of Poles | 03 | | | | | | | | | | | |
| MTBF | ≥5000h | | | | | | | | | | | |
| 11. | Eligibility Criteria | (i). Have experience to work for ships (preferably PMSA ships). (ii). Company must be certified with HQ PMSA. (iii). Company must be Income and Sales tax registered. (iv). Company must have good experience of procurement of electrical components | | | | | | | | | | |
| 12. | EDC/ EDD | 10 Days after award of contract | | | | | | | | | | |
| 13. | Warranty | 1 Year | | | | | | | | | | |
| 14. | Acceptance Criteria | Item will be accepted after onboard inspection and satisfactory trials for 48 hours | | | | | | | | | | |
| 15. | Any Other Relevant Information | SS contact (0321-3000503) | | | | | | | | | | |

IT NO : IT/46/15/2024-25

PMSS KASHMIR

| IT SPECIFICATIONS: EXTRACTION AND INSTALLATION OF ENGINES' CONTROLLER / SOFTWARE | | |
|---|--|--|
| 1. | Parent Equipment | Propulsion Control System |
| 2. | Sub Equipment | Main Engines |
| 3. | Assembly Component | Engines' Controller Software |
| 4. | Make | German |
| 5. | Model | Europa Regulator |
| 6. | Quantity | 02 |
| 7. | Justification i.e PMS/ Failure/ FWT etc | FWT |
| 8. | Work Required | Extraction and installation of engines' controller software |
| 9. | Detailed scope of work | a. Dismantling of PCBs b. Extraction of software c. Installation of PCBs d. Adjustment of parameters in software e. Provision of separate tool to connect PCB with laptop f. All spares, tools and test equipment are to be arranged by firm g. Any damage/ defect, wear & tear occurred during the course of removal and installation work will be repaired by firm |
| 10. | Technical specifications | As Per Sample |
| 11. | Eligibility Criteria | a. Company must be certified with HQ PMSA. b. Company must be Income and Sales tax registered. |
| 12. | EDC/ EDD | 10 Days after award of contract |
| 13. | Warranty | 01 Years |
| 14. | Acceptance Criteria | Satisfactory Trials at sea for 15 x days |
| 15. | Any Other Relevant Information | Contractor must visit onboard to exact scope of work before providing quotation |

IT NO : IT/46/16/2024-25

IT SPECIFICATION FOR REPAIR/ REPLACEMENT OF JSS 2150 MF HF TX/RX SET - PMSS NUSRAT

| S No | IT Specification | |
|------|--------------------------|--|
| 1. | Ship's Name | PMSS NUSRAT |
| 2. | Parent Equipment/ System | JSS 2150 MF HF TX/RX SET |
| 3. | Sub Equipment/ system | JSS 2150 MF HF TX/RX SET |
| 4. | Assembly/Equipment | - |
| 5. | Make | JAPAN RADIO CO |
| 6. | Model | JSS 2150 |
| 7. | Qty | 01 |
| 8. | Justification | Item is critical required for operational requirement of equipment onboard ship |
| 9. | Work Required | Repair/ Replacement of JSS 2150 MF HF TX/RX set |
| 10. | Detailed Scope of Works | Following Scope of work: a. Repair/ replacement of JSS 2150 HF TX/RX set b. Ensuring satisfactory operation of JSS 2150 HF TX/RX set c. Provision of all necessary accessories for SAT Ops d. Complete onboard trials/ set to work in TX/RX Mode e. Growth work will be sole responsibility of the firm |
| 11. | Technical Spec | JSS 2150 HF TX/RX set: a. Max Power output 150 watt b. Frequency Range 1.6 to 30 MHz c. Power supply 24VDC 30Amp with input voltage 180 – 260 VAC d. Operating Temperature: -15 - 55C e. Including battery bank with UPS min backup 30 minutes and max 2 hours |
| 12. | Eligibilities | a. As per TSR b. The firm should visit onboard and assess the extent of required work. c. The firm should be having good experience in repair/maintenance of such system/ equipment. d. The firm should be NTN /GST registered |
| 13. | EDC | 14 x working days after issuance of work order. |
| 14. | Warranty | 01 Year |
| 15. | Acceptance criteria | Satisfactory Harbor/Sea trials after completion of work |

IT NO : IT/46/17/2024-25

IT SPECS FOR DANGER TAGS, HIGH VOLTAGE WARNING & STANDARDIZED SERVICE TO SOURCE TALLIES – PMSS BARKAT

| | | |
|-----|-------------------------|--|
| 1. | Ship's Name | PMSS BARKAT |
| 2. | Parent equipment/system | POWER GENERATION AND DISTRIBUTION |
| 3. | Sub equipment | Electrical Distribution Panels |
| 4. | Assembly/ equipment | Switches Sockets |
| 5. | Make | - |
| 6. | Model | - |
| 7. | Qty | 750 in no acrylic/metallic tallies a. Danger 380 Volt Panel Tags 30mm x 60mm in Red color 80 in No b. Danger 380 Volt Warning Tags 90mm x 120mm in Red color 10 in No c. Danger "DO NOT SWITCH ON" tags 90mm x 120mm 10 in No d. Danger 220 Volt Tags 20mm x 50mm in Yellow color 370 in No e. Panel Tallies 30mm x 60mm in Black Color 280 in No |
| 8. | Justification | Coated paper service to source tallies pasted on panels switches and sockets |
| 9. | Work required | Standardized Danger Tags, High Voltage Warning and service to source tallies on acrylic/metallic sheet in black, red and yellow colors are required for safety concern * |
| 10. | Detailed scope of work | a. Replacement of 380V acrylic/metallic tallies in red color b. Replacement of 220V acrylic/metallic tallies in yellow color c. Replacement of switch board tallies in black color |
| 11. | Technical spec | 750 in no tallies on acrylic sheet are to be made new |
| 12. | Eligibilities | a. The firm must visit onboard and carry out diagnoses/inspections to establish the extent of required work. b. The firm must have sufficient experience of same kind of work and experienced. c. The firm should be NTN /GST registered |
| 13. | EDC | 07 x days after issuance of work/confirmation order. |
| 14. | Warranty | 01 Year |
| 15. | Acceptance criteria | a. Satisfactory work done by the firm. b. Successful completion and acceptance by the end user. |

IT NO : IT/46/18/2024-25

IT SPECIFICATION FOR REPAIR/ REPLACEMENT OF WARNING BELLS AND CABLES FOR 37MM AND 02 x 14.5MM GUNS – PMSS BARKAT

| IT SPECIFICATION | | |
|------------------|---|---|
| 1. | Ship Name | PMSS BARKAT |
| 2. | Parent equipment | Warning/ alarm bells, cables and switches for 37mm and 02 x 14.5mm guns |
| 3. | Sub equipment | Warning bells and power cables. |
| 4. | Assembly component | 03 x alarm bells |
| 5. | Make | PAKISTAN |
| 6. | Model | 793446 |
| 7. | Quantity | 03 x warning bells, power cable x 200m & 03x switches. |
| 8. | Justification i.e PMS/ Failure/ FWT etc | FWT |
| 9. | Work require/ defect | Repair/ replacement of warning/ alarm bells and power cables for guns |
| 10. | Detail scope of work | a. Replacement of warning/ alarm bells and power cables for guns. b. Successful operations of warning/ alarm bells. c. All spare tools, special equipment/ tools accessories etc for fabrication/ installation of warning/ alarm are to be arranged by the firm. d. Dismantling, assembling transportation will be responsibility of the firm. e. Any other work required to ensure good quality and optimum performance of the warning/ alarm bells. f. All in way work will be undertaken by the firm. g. The firm will be responsible to undertake any work not covered above for repair/ replacement of warning alarm/ bells. |
| 11. | Technical specification (if any) | a. Marine version alarm bells. b. Power requirement 220V AC. c. Power cable marine version. d. Marine version switches |
| 12. | Eligibility criteria | a. As per TSR. b. The firm should visit onboard and access the extend of required work and understand exact nature of defect before quotation. c. The firm should having good experience to repair/ maintenance/ replacement of such system/ equipment. d. The firm should be NTN/ GST registered. |
| 13. | EDC | 02 x week after issuance of work order |
| 14. | Warranty | 01 Year. |
| 15. | Acceptance criteria (if any) | Satisfactory trials after installation in at harbor and at sea. |

IT NO : IT/46/19/2024-25

INSTALLATION OF STAG HORNS CLEATS AND DECK EYES DURING EMP – PMSS BASOL

| S No | Description | Description |
|------|--------------------------------|--|
| 1 | Description | Staghorns, Cleats And Deck Eyes |
| 2 | Location | Port & Stbd Alleyways |
| 3 | Make | - |
| 4 | Colour | - |
| 5. | Quantity | a. 4 x Staghorns b. 4 x Cleats c. 6 x Deck eyes |
| 6. | Justification i.e Failure/ FWT | Installation of 4 x staghorns, 4 x cleats and 6 x deck eyes are required on Boat Deck/ Stbd & Port Alleyways to secure RHIB/ FVs/ dhows alongside. |
| 7. | Work Required/ Defect | Installation of 4 x staghorns, 4 x cleats and 6 x deck eyes are required on Boat Deck/ Stbd & Port Alleyways to secure RHIB/ FVs/ dhows alongside. |
| 8. | Detailed Scope of Work | a. Strengthening of deck where said items are to be installed. b. Welding of 4 x staghorns, 4 x cleats and 6 x deck eyes on strengthened deck. c. Load test/ NDT of newly installed items. |
| 9. | Technical Specs | As per OEM Manual |
| 10. | Eligibility Criteria | Reputable contractor having experience of paint work. |
| 11. | EDC/ EDD | 02 Weeks |
| 12. | Warranty | 5 Year |
| 13. | Acceptance Criteria | Visual inspection |
| 14. | Any other information | a. All accessories required for installation are to be arranged by contractor. b. Contractor may visit onboard prior installation. c. Job will have to be completed while ship is at SLTS. |

IT NO : IT/46/20/2024-25

IT SPECIFICATION OF 04X DISH TV RECEIVERS, DISH AND CABLE PMSS BARKAT

| IT SPECIFICATION | | |
|------------------|---|---|
| 1. | Ship's Name | PMSS BARKAT |
| 2. | Parent equipment | DISH TV SYSTEM |
| 3. | Sub equipment | Dish Receiver , Dish And Cable |
| 4. | Assembly component | - |
| 5. | Make | CHINA |
| 6. | Model | Echo Link Receiver, RG6 Cable and |
| 7. | Quantity | 04 X Receiver ,01 X Dish And 300 Meters Cable |
| 8. | Justification i.e PMS/ Failure/ FWT etc | FWT |
| 9. | Work require/ defect | Installation of complete DISH TV system. |
| 10. | Detail scope of work | a. Replacement of Complete DISH TV System as per IT spec. b. All spare tools, special equipment/ tools accessories etc for installation of Dish system are to be arranged by the firm. c. Dismantling, assembling transportation will be responsibility of the firm. d. Any other work required to ensure good quality and optimum performance of the DISH TV System. e. All in way work will be undertaken by the firm. f. The firm will be responsible to undertake any work not covered above for installation of DISH TV System. |
| 11. | Technical specification (if any) | a. Echo link dish receivers(M-5000) b. RG6 coaxial cable c. Dish |
| 12. | Eligibility criteria | a. As per TSR b. The firm should visit onboard and access the extend of required work and understand exact nature of defect before quotation. c. The firm should having good experience to repair/ maintenance/ replacement of such system/ equipment. d. The firm should be NTN/ GST registered. |
| 13. | EDC | 02 X week after issuance of work order. |
| 14. | Warranty | 01 Year. |
| 15. | Acceptance criteria (if any) | Satisfactory trials after installation in at harbor. |

IT SPECIFICATIONS FOR REQUIREMENT OF COMPLETE SERVICING/ OVERHAULING OF SSDG NO 1 ALTERNATOR: PMSS BARKAT

| | | |
|-----|-------------------------|---|
| 1. | Ship's Name | PMSS BARKAT |
| 2. | Parent equipment/system | SSDG No 1 |
| 3. | Sub equipment | Alternator with all associated accessories |
| 4. | Assembly/ equipment | Exciter Assembly |
| 5. | Make | CUMMINS |
| 6. | Model | 6CTA8-3 |
| 7. | Qty | 01 |
| 8. | Justification | To improve working efficiency of SSDG No 1 alternator. |
| 9. | Work required | Servicing & overhauling of complete alternator. |
| 10. | Detailed scope of work | <p>Scope of work is as under:</p> <p>a. Remove the alternator and unshipped if required.</p> <p>b. Servicing & overhauling of exciter rotor of SSDG No 1.</p> <p>c. Inspect and measure insulation/ field balancing of main stator and rotor of the alternator and carry out appropriate repair works if required.</p> <p>d. Replace bridge diodes assembly (Spare diode assembly to be provided).</p> <p>e. Install the alternator.</p> <p>f. Replace AVR card.</p> <p>g. Old/ defective parts/ components are to be handed over to SS for survey.</p> <p>h. Requirement of external services, if required will be responsibility of firm.</p> <p>j. All spares (must be genuine) tools special equipment /accessories required for said work are to be arranged by the firm.</p> <p>k. Any damage/ defect/wear tear occurred during course of removal; repair and installation of system/equipment will be repaired /met by firm.</p> <p>l. The firm will be responsible for all removal, transportation and installation work during warranty/ grantee periods claims in case of any rework.</p> <p>m. All tools and accessories required for said work are to be arranged by the firm</p> |
| 11. | Technical spec | Output: 380V, 50Hz, 3 Phase Capacity: 110 KW |
| 12. | Eligibilities | <p>a. The firm must visit onboard and carry out diagnoses/inspections to establish the extent of required work.</p> <p>b. The firm must have sufficient experience of same kind of work and experienced.</p> <p>c. The firm should be NTN /GST registered.</p> <p>d. Any damage/defect/wear tear occurred during course of removal, repair and installation of system/ equipment will be repaired/ met by firm.</p> |
| 13. | EDC | 05 x days after issuance of work/confirmation order. |
| 14. | Warranty | 01 Year |
| 15. | Acceptance criteria | <p>a. Satisfactory work done by the firm.</p> <p>b. Full load trials.</p> |
| | | <p>c. Physical inspection and suitability for spares by end user</p> <p>d. Satisfactory trials (HATs/ SATs).</p> |

IT SPECIFICATION FOR REPAIR/ MAINTENANCE OF STBD MDE JACKET WATER COOLER - PMSS SABQAT

| | | |
|-----|---|--|
| 1. | Parent Equipment | Main diesel engine (MDE) |
| 2. | Sub Equipment | Jacket water cooler (MDE) |
| 3. | Assembly Component | Jacket water cooler |
| 4. | Make | Caterpillar |
| 5. | Model | Main Diesel Engine (MDE) 3516 |
| 6. | Qty | 01 |
| 7. | Justification PMS/Failure/ F.W.T etc | i.e Jacket water cooler suspected leaky |
| 8. | Work required/ defect | Repair/ maintenance of jacket water cooler |
| 9. | Detailed scope of work | <p>Scope of work includes following works</p> <p>a. Dismantling and fitting of jacket water cooler along with assembly components</p> <p>b. Chemical cleaning of jacket water cooler</p> <p>c. After chemical cleaning of cooler pressure test is to be carried out up to 10 Bar.</p> <p>d. After pressure testing repair work of leaky tubes are to be carried out by the firm.</p> <p>e. Any damage occurs during the course of inspection work will be done by firm without any liability/ responsibility on part of the ship/PMSA.</p> <p>f. Requirement of external services if any will be responsibility of the firm without any liability on the part of ship.</p> <p>g. Re install cooler after chemical cleaning and pressure test with new seals and gaskets.</p> <p>h. Prove system for any leakages and satisfactory operation.</p> <p>j. All material, spares, tools, special equipment / tools accessories etc required for said work are to be arranged by the contractor.</p> <p>k. Defective items are to be handover to ship staff.</p> |
| 10. | Technical Specification | Caterpillar |
| 11. | Eligibilities | <p>a. The firm should visit onboard and carry out inspection to establish the extent of required work.</p> <p>b. The firm should have experience of the same kind of work.</p> <p>c. The firm should be NTN/GST registered.</p> |
| 12. | EDC/EDD | 07 working days |
| 13. | Warranty | 01 year |
| 14. | Acceptance Criteria (if any) | <p>a. OEM certified material</p> <p>b. Satisfactory running trials</p> |

IT SPECIFICATIONS FOR REPAIR/ OVERHAULING OF MAIN BILGE PUMP - PMSS DASHT

| S No | Description | |
|------|-----------------------|--|
| 1. | Parent Equipment | Bilges System |
| 2. | Sub Equipment | Main Bilge Pump |
| 3. | Assembly Component | Pump alongwith Motor |
| 4. | Model | 80CLZ-5A |
| 5. | Make | Hebei Hengsheng Pumps Co., Ltd.. |
| 6. | Quantity | 01 |
| 7. | Justification | Degraded performance and low suction/ discharge pressure |
| 8. | Work required | Overhauling of Bilge pump required for satisfactory operation |
| 9. | Technical Data | Technical specifications are per OEM |
| 10. | Scope of Work | a. Replacement of degraded pump impeller with nickel bronze/ phosphorus bronze material pump impeller b. Replacement of old mechanical seal with high quality mechanical seal c. Replacement of degraded seal ring with nickel bronze/ phosphorus bronze seal ring d. Replacement of impeller keys with nickel bronze/ phosphorus bronze material impeller keys e. Precise alignment of pump with motor f. Replacement of motor bearing with new g. Any growth work will be responsibility of firm |
| 11. | Eligibilities | a. Reputable local contractor having working experience onboard b. Firm must visit site for understanding exact nature of work/ hindrances involved in job prior quoting to avoid inconvenience on later stage after award of work order |
| 12. | EDC | 01 x week |
| 13. | Warranty | One year after completion of successful trials |
| 14. | Acceptance Criteria | a. Satisfactory suction/ discharge pressure of pump b. Precise alignment alongwith vibration analysis report c. Satisfactory operation without leakage d. Satisfactory operation of gauge after installation |
| 15. | Any other Information | a. Firms are requested to visit site before quoting b. Damage to system during work is responsibility of contractor. c. Dismantling/ assembling work is responsibility of contractor. |

IT SPECIFICATIONS FOR REPLACEMENT/ FABRICATION OF VENTILATION DUCTS AND FANS - PMSS DASHT

| S No | Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------|--------------------------|--|-------------|-------------------------|---------------|----------|--------|--------|----|---|----------|--------|----|---|------------|--------|----|---|---------|---------|----|---|-----|--------|----|---|-------------|-------|----|---|-------------|--------------------------|-------------|---------|------|--------|-------|----------|-----------|----------|---------|--------------|-------|------------|
| 1. | Parent Equipment | Messes, Cabins and AER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. | Sub Equipment | Exhaust and Ventilation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | Assembly Equipment | Trunking and Fans | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. | Make | China | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. | Model | Chinese/ Locally Manufactured Marine Version | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. | Quantity | 06 Compartments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. | Justification | Deteriorated/ degraded (ageing factor) trunking | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. | Work required | Fabrication and replacement of trunking and fans | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. | Technical Specs | Fabrication of ventilation ducts (1.3 thickness MS/ SS Galvanized material) with following dimensions: <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Compartment</th> <th>Width x Height (Inches)</th> <th>Length (Feet)</th> <th>Duct Fan</th> </tr> </thead> <tbody> <tr> <td>Sewage</td> <td>12 x 9</td> <td>15</td> <td>0</td> </tr> <tr> <td>Ops Mess</td> <td>5 x 10</td> <td>25</td> <td>2</td> </tr> <tr> <td>L & M Mess</td> <td>6 x 10</td> <td>11</td> <td>1</td> </tr> <tr> <td>Laundry</td> <td>10 x 12</td> <td>14</td> <td>0</td> </tr> <tr> <td>AER</td> <td>6 x 10</td> <td>12</td> <td>2</td> </tr> <tr> <td>CO Washroom</td> <td>6 x 9</td> <td>06</td> <td>0</td> </tr> </tbody> </table> Installation of Ventilation Fans with following technical specifications are required: <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Description</th> <th>Technical Specifications</th> </tr> </thead> <tbody> <tr> <td>Manufacture</td> <td>K Sileo</td> </tr> <tr> <td>Size</td> <td>180 XL</td> </tr> <tr> <td>Input</td> <td>230 V AC</td> </tr> <tr> <td>Frequency</td> <td>50/60 Hz</td> </tr> <tr> <td>Current</td> <td>0.45/ 0.60 A</td> </tr> <tr> <td>Power</td> <td>102/ 137 W</td> </tr> </tbody> </table> | Compartment | Width x Height (Inches) | Length (Feet) | Duct Fan | Sewage | 12 x 9 | 15 | 0 | Ops Mess | 5 x 10 | 25 | 2 | L & M Mess | 6 x 10 | 11 | 1 | Laundry | 10 x 12 | 14 | 0 | AER | 6 x 10 | 12 | 2 | CO Washroom | 6 x 9 | 06 | 0 | Description | Technical Specifications | Manufacture | K Sileo | Size | 180 XL | Input | 230 V AC | Frequency | 50/60 Hz | Current | 0.45/ 0.60 A | Power | 102/ 137 W |
| Compartment | Width x Height (Inches) | Length (Feet) | Duct Fan | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sewage | 12 x 9 | 15 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ops Mess | 5 x 10 | 25 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L & M Mess | 6 x 10 | 11 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Laundry | 10 x 12 | 14 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AER | 6 x 10 | 12 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CO Washroom | 6 x 9 | 06 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Description | Technical Specifications | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Manufacture | K Sileo | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Size | 180 XL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Input | 230 V AC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Frequency | 50/60 Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Current | 0.45/ 0.60 A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Power | 102/ 137 W | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. | Scope of work | a. Removal of deteriorated ducts and fans b. Fabrication of new ducts by the firm with MS Galvanized material c. Installation of new locally manufactured marine version ventilation fans in ducts d. Pressure test of ducts be undertaken for leakages and new ducts to be installed with new gaskets on every joint | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | |
|-----|--------------------------------|---|
| | | <p>e. New studs/ Nut bolts be used for Stainless Steel material</p> <p>f. After installation of ducts, successful onboard trials on running ventilation fans without any leakage from the ducts</p> <p>g. All in-way accessories be removed by the firm and fitted back</p> <p>h. Growth work will be sole responsibility of the firm. To avoid complications on later stage, firm is directed to visit the ship before quoting for understanding removal/installation and defect rectification scope</p> <p>j. Firm quoting without visiting will be liable for rejection in TSR</p> |
| 11. | Eligibilities | <p>a. Any registered and security wise cleared local contractor having good experience in above mentioned scope of work</p> <p>b. Firm must visit site for understanding exact nature of defect/hindrances involved in job prior quoting to avoid inconvenience on later stage after reward of Work Order.</p> |
| 12. | EDC | 01 x Week |
| 13. | Warranty | 01 x Year |
| 14. | Acceptance Criteria | Satisfactory fabrication, installation and operation of exhaust and ventilation fans without any leakage from the ventilation ducts |
| 15. | Any other relevant information | Damage/ defect occurred to system during work is responsibility of contractor. Contractor must visit site and inspect scope of work prior quoting otherwise will be liable to rejection. |

IT NO : IT/46/25/2024-25

IT SPECIFICATIONS FOR REPAIR/ REPLACEMENT OF 04 X SHAFT BRAKE PADS - PMSS DASHT

| S No | Description | |
|------|--------------------------------|---|
| 1. | Parent Equipment | Shafts |
| 2. | Sub Equipment | Brake |
| 3. | Assembly Component | Pads |
| 4. | Quantity | 04 |
| 5. | Make | China |
| 6. | Model | N/A |
| 7. | Justification | Degraded performance during Pre DED trials |
| 8. | Work Required | Repair/ replacement of all 04 x Shaft Brake Pads |
| 9. | Scope of work | <p>a. Detailed inspection of 04 x Shafts</p> <p>b. Removal of complete accessories of shafts brake pads.</p> <p>c. Replacement of all brake pads.</p> <p>d. Replacement of all defective fittings.</p> <p>e. Replacement of nuts/ bolts with SS.</p> <p>f. All tools and equipments be arranged by the firm</p> <p>g. All spares/ parts provided must be OEM specified only</p> <p>h. Repair/ replacement of the brake pads with SAT running all 04 x shafts at 2050 rpms and stopping.</p> |
| 10. | Technical specs | As per OEM manual |
| 11. | Eligibilities | Any security wise clear, reputable local contractor having relevant working experience |
| 12. | EDC | 07 x Days |
| 13. | Warranty | 01 x year complete warranty of replaced part after completion of successful trials |
| 14. | Acceptance Criteria | Satisfactory running and stopping of 04 x Shafts at 2050 rpms |
| 15. | Any other relevant information | Firms are requested to visit onboard prior quoting to understand exact scope of work. |

IT NO : IT/46/26/2024-25

IT SPECIFICATION FOR CONDUCT OF 6000 HRS PMS ROUTINE OF GENSET # 1 PMSS KASHMIR

| | | |
|----|---|--|
| 1. | Parent Equipment | Power Generation and Distribution System |
| 2. | Sub Equipment | SSDG # 1 |
| 3. | Assembly Component | Misc |
| 4. | Make | CUMMINS |
| 5. | Model | K19-DMMARINE GENSETS |
| 6. | Quantity | 01 |
| 7. | Justification i.e PMS/ Failure/ FWT etc | 6000 Hrs PMS Routine |
| 8. | Work Required/ Defect | As per para 7 & 9 |
| 9. | Scope of work | <p>Conduct of 6000 Hrs routine of GENSET # 1</p> <p>Include following tasks:</p> <p>1. Replacement of requisite spares</p> <p>2. Undertake following works:</p> <p>a. Adjust the valve clearance and nozzle stroke.</p> <p>b. Check crankshaft axial clearance.</p> <p>c. Tighten all bolts on the mounting bracket and check the seawater and fresh water cooler.</p> <p>d. Clean and verify the fuel injector pump.</p> <p>e. Check the turbocharger / Vibration isolators / pump, clean and flush the cooling system.</p> <p>f. Verify the diesel engine protection system.</p> <p>g. Replace the thermostat and seals.</p> <p>h. Check the throttle stroke (adjust the connecting rod of variable speed throttle).</p> <p>j. Replace oil and fuel filters (including full flow and bypass oil filter.)</p> <p>k. Check the concentration and level of the diesel engine coolant DCA, if necessary, add/ replace DCA.</p> <p>l. Repair/ replace water pump</p> <p>m. Check or rebuild turbocharge and vibration damper</p> <p>3. Additional work regarding inspection of flywheel and servicing of air stator may also be carried out</p> |

| | | |
|-----|--------------------------------|---|
| 10. | Technical Specs | 4. Any growth work during conduct of routine As per para 9 and Technical Manual of Cummins (TPI: 3-3703-450-001) |
| 11. | Eligibility Criteria | (i). Company must be certified with HQ PMSA (preferably M/s Orient Energy Systems Pvt Ltd) (ii). Company must be Income and Sales tax registered (iii). Company must have good experience of procurement of marine equipment |
| 12. | EDC | 15 x Working days after issuance of work order |
| 13. | Warranty | 1 year. |
| 14. | Acceptance Criteria (if any) | (i). Satisfactory operation of GENSETs upto 100% load trials with zero leakage (ii). Power Quality Analysis (PQA) by firm (iii). Functional testing of safeties (iv). Firm will be responsible for any growth work during conduct of routine |
| 15. | Any other relevant information | SS Contact (0321-3000503) |

IT NO : IT/46/27/2024-25

IT SPECIFICATIONS OF REPAIR/ REPLACEMENT OF THERMAL IMAGER CAMERA OF 30MM NAVAL GUN – PMSS HINGOL

| S No | Description | | | | | | | | | |
|-------|--------------------------------|---|-------------------|-------------|-------------|-------------------|----|--------|-------------------------|----|
| 1. | Parent Equipment | CS/ AN3 type 30mm naval gun | | | | | | | | |
| 2. | Sub Equipment | Thermal infrared imager | | | | | | | | |
| 3. | Assembly Component | Photoelectric detection assembly | | | | | | | | |
| 4. | Model | CS/ AN3 | | | | | | | | |
| 5. | Make | CHANGAN INDUSTRY (GROUP) CO., LTD CHINA | | | | | | | | |
| 6. | Quantity/Item Details | <table border="1"> <thead> <tr> <th>S. No</th> <th>Part Number</th> <th>Description</th> <th>Required Quantity</th> </tr> </thead> <tbody> <tr> <td>a.</td> <td>14-5-2</td> <td>Thermal infrared imager</td> <td>01</td> </tr> </tbody> </table> | S. No | Part Number | Description | Required Quantity | a. | 14-5-2 | Thermal infrared imager | 01 |
| S. No | Part Number | Description | Required Quantity | | | | | | | |
| a. | 14-5-2 | Thermal infrared imager | 01 | | | | | | | |
| 7. | Justification | Repair/ Replacement of suspected defective thermal infrared imager of 30mm naval gun | | | | | | | | |
| 8. | Work required/Defect | a. Defect diagnosis/ rectification in respect of thermal infrared imager of 30mm naval gun. b. Satisfactory installation of Sub-Equipment/ components as diagnosed/ required. c. Complete onboard trials. d. Growth work will be sole responsibility of the firm. | | | | | | | | |
| 9. | Scope of work | a. Defect diagnosis in respect of thermal infrared imager of 30mm naval gun. b. Repair/ replacement of Thermal Imager (IR) Camera along with revitalization of Gun control panel c. Subsequent alignment of the IR camera with telescopic eye piece d. Satisfactory re-installation of Sub-Equipment/ components as diagnosed/ required. e. Complete onboard trials. f. Growth work will be sole responsibility of the firm. | | | | | | | | |
| 10. | Technical Specifications | Power Input –AC 380V 50HZ and DC 27V Infrared band- 8µm~12 µm Viewing field(horizontal vertical): 7° x 5° Operating distance (visibility 20km, temperature difference between environment and target more then 6° , 10x15m target): ≥3000m | | | | | | | | |
| 11. | Eligibility Criteria | Any registered and security wise cleared local contractor who has working experience onboard MPVs | | | | | | | | |
| 12. | EDD | 01 x Month | | | | | | | | |
| 13. | Warranty | 01 Year Warranty | | | | | | | | |
| 14. | Acceptance Criteria | a. OEM certified item b. Technical Specifications to be provided c. Upon scrutiny of items and provided documents i.e. technical specifications along with production certificates by OEM d. Satisfactory trials onboard ship. | | | | | | | | |
| 15. | Any Other Relevant Information | SS may be contacted for any requirement/query | | | | | | | | |

IT NO : IT/46/28/2024-25

IT SPECIFICATIONS FOR REPAIR/ REPLACEMENT OF MAIN ENGINE THERMO REGULATING VALVES (TRVs) - PMSS KOLACHI

| S No | Description | |
|------|--------------------------------|--|
| 1. | Parent Equipment | DALIAN CRCC MAN Diesel Engines |
| 2. | Sub Equipment | Coolant circuit |
| 3. | Assembly Equipment | Thermo regulating Valves |
| 4. | Make | AMOT |
| 5. | Model | Series B – nom 82°C (MAN B&W part No.80.100.06572.206) |
| 6. | Required Quantity | As mentioned in detail scope of work |
| 7. | Justification | Repair/ Replacement of Thermo regulating valves of both main engines due to intermittent response at sea |
| 8. | Work Required | Repair/ Replacement of 04 x Thermo regulating valves of (02 x LT and 02 x HT) coolant circuit of both main engines |
| 9. | Detailed scope of work | Repair/ Replacement of following items of TRVs: a. TRV Element b. O-rings c. Gasket |
| 10. | Technical specifications | As per OEM specifications/ Manual |
| 11. | Eligibility Criteria | Reputable local/ international contractor having working experience with PMSA |
| 12. | EDD/EDC | 30 Days after award of contract |
| 13. | Warranty | 01 Year warranty at acceptance criteria |
| 14. | Acceptance Criteria (if any) | a. OEM Certified item b. TRV should start operate at 79 °C and fully operate at 83 °C c. Successful Trials. |
| 15. | Any other relevant information | Firm/ contractor Rep should visit/ consult MEO i.o.t understand scope of work (Contact no 03338948563) |

| IT SPECIFICATIONS FOR REPAIR/ REPLACEMENT OF FREQUENCY VARIABLE SEA WATER SUPPLY UNIT - PMSS KOLACHI | | | | |
|--|------------------------------|--|------------------|-----------------|
| S.No | Description | IT Specification | | |
| 1. | Parent Equipment | Frequency Variable Sea Water Supply Unit | | |
| 2. | Sub Equipment | Sea water flushing unit | | |
| 3. | Assembly Equipment | Sea Water Pump | | |
| 4. | Make | Nantong Huameng Ship Machinery Factory | | |
| 5. | Model | CBG5044-25A-00 | | |
| 6. | Required Quantity | S No | Part Number | Description |
| | | a. | BNG6/18-2 | Impeller |
| | | b. | --- | Motor winding |
| | | c. | BNG6/18-4 | Mechanical seal |
| | | d. | HMYLG24-00-10 | Neoprene airbag |
| | | e. | 0.2 ~ 0.4Mpa | Pressure Switch |
| | | f. | CBG5044-25A-00-B | Safety valve |
| 7. | Justification | Repair/ replacement of above mentioned items of frequency variable sea water flushing plant for SAT operation of system | | |
| 8. | Work required | Repair/ replacement of defective/ degraded parts of frequency variable sea water flushing plant. | | |
| 9. | Detailed scope of work | Repair/ replacement of following items is required: a. Impeller b. Motor bearing c. Motor winding d. Pump bearing e. Mechanical seal f. Pressure switch g. Safety valve | | |
| 10. | Technical specifications | As per OEM specifications/Manual | | |
| 11. | Eligibilities | Reputable local contractor having working experience with PMSA | | |
| 12. | EDD/EDC | 20 days | | |
| 13. | Warranty | 1 year for Pump and motor as per acceptance criteria | | |
| 14. | Acceptance Criteria (if any) | a. Sea water pump pressure should be above 4 bar b. Motor current and temperature should be within working range limit c. Pump should be running without any abnormal noise d. Successful harbor trials | | |
| 15. | Any other relevant Info | Firm Rep must visit/ consult MEO prior quoting on PEPRA (Contact No 03338948583) | | |

| IT SPECIFICATION REPAIRING/REPLACEMENT AND POLISHING OF OFFICE FURNITURE MCW DIRECTORATE | | | | |
|--|----------------------|--|----|--|
| S.No | Description | IT Specification | | |
| 1. | Parent Equipment | Office Furniture | | |
| 2. | Sub Equipment | N/A | | |
| 3. | Make | N/A | | |
| 4. | Model | N/A | | |
| 5. | Qty | As mentioned against each | | |
| 6. | Justification | Office furniture are deteriorated due to fair, wear and tear | | |
| 7. | Work required | Repairing/Polishing Work | | |
| 8. | Detail scope of work | Repairing/Polishing of work stations and replacement of Formica Sheets | 03 | |
| | | Repairing/Polishing and replacement of Formica sheets of office table and side table | 02 | |
| | | Replacement of Drawers of work stations and office table | 08 | |
| | | Re-Cushioning of Sofa Set | 01 | |
| | | Repair of officer Revolving chair | 01 | |
| | | Repair/Polishing of cabinets | 13 | |
| | | Repair/Replacement of locks | 11 | |
| | | Replacement of Door Stopper/Closer | 02 | |
| | | Replacement of Door Locks | 02 | |
| 9. | Technical Specs | N/A | | |
| 10. | Eligible Criteria | Any reputed firm having good experience of furniture | | |
| 11. | EDC | 05 x Days | | |
| 12. | Warranty | 01 x Year | | |
| 13. | Acceptance Criteria | Work will be inspected and accepted by end user | | |

| REPAIR/ MAINTENANCE OF SYNCHRONIZING UNIT OF SSDGs : PMSS BARKAT | | |
|--|-------------------------|---|
| S.No | Description | IT Specification |
| 1. | Ship's Name | PMSS BARKAT |
| 2. | Parent equipment/system | Power Generation and Distribution |
| 3. | Sub equipment | Switchboard |
| 4. | Assembly/ equipment | Synchro scope unit and load shedding module in parallel |
| 5. | Make | N/A |
| 6. | Model | N/A |
| 7. | Qty | 01 |
| 8. | Justification | Synchro scope unit in parallel is observed defective due to FWT/ Old vintage. |
| 9. | Work required | Synchro scope unit in parallel is required to be repair/ maintenance. |
| 10. | Detailed scope of work | Following work is required to be undertaken for repair/ maintenance of synchro scope unit for operating SSDGs in parallel. a. Synchro scope unit/ method is to be repaired/ maintenance. b. 03 x mechanical governors of SSDGs to be replaced with electronic control governors for operation in synchronizing method. c. Parallel system for frequency and voltage meters to be ensured. d. Synchronizing AVR card to be replaced. e. KW meters are to be repaired/ replaced. f. Current transformers (CTs) are to be repaired/ replaced for SAT ops. g. Load shedding module and auto synchronizing to be replaced for safe operation of SSDGs. h. Control cables and wiring to repair/ replaced. i. Repair/ maintenance of 3 Phase bus bar for phase sequence to be carried. j. Voltage magnitude for operation of SSDGs in parallel to be ensured. k. Frequency of putting on load SSDGs must watch with bus bar frequency to be ensured. l. All spares (must be genuine) tools special equipment /accessories required for said Repair/ Maintenance are to be arranged by the firm. m. Any damage/ defect/wear tear occurred during course of removal, repair and installation of system/equipment will be repaired /met by firm. n. The firm will be responsible for all removal, transportation and installation work during warranty/ guarantee periods claims in case of any rework. o. Requirement of external services, if required will be responsibility of firm. |
| 11. | Technical spec | a. 380VAC Main supply b. 50Hz c. 3 Phase d. 220V-240VAC e. 24VDC Control Supply |
| 12. | Eligibilities | a. The firm must visit onboard and carry out diagnoses/inspections to establish the extent of required work. b. The firm must have sufficient experience of same kind of work and experienced. c. The firm should be NTN /GST registered |
| 13. | EDC | 07 x days after issuance of work/confirmation order |

| | | |
|-----|---------------------|---|
| 14. | Warranty | 01 Year |
| 15. | Acceptance criteria | a. 380VAC Main supply b. 50Hz c. 3 Phase d. 220V-240VAC e. 24VDC Control Supply |

IT NO : IT/46/32/2024-25

IT SPECIFICATION FOR REPAIR/ REPLACEMENT OF DIRTY LUBE OIL SYSTEM – PMSS REHMAT

| S No | IT Specifications | |
|------|---|---|
| 1. | Parent Equipment | Main engines, SSDGs and gear boxes |
| 2. | Sub Equipment | Dirty lube oil system |
| 3. | Assembly Component | Dirty lube oil tank and pump with associated piping |
| 4. | Make | China |
| 5. | Model | - |
| 6. | Quantity | 01 x Dirty lube oil tank 01 x Lube oil pump (Electric) 01 x lube oil hand pump Associated piping with main machinery |
| 7. | Justification i.e PMS/ Failure/ FWT etc | Dirty lube oil system is observed degraded due FWT. |
| 8. | Work required/ Defect | Dirty oil system is observed degraded due FWT and same is required to be replaced for satisfactory operation. |
| 9. | Technical Specification | a. Dirty lube oil tank (500 Ltrs) b. Lube oil pump (220VAC 3Phase) c. Associated lube oil piping. |
| 10. | Scope of Work | Following works are required to be undertaken for repair/ replacement of dirty lube oil system of main machinery: a. Dirty lube oil pump is to be overhauled/ replaced. b. Dirty lube oil tank to be opened, cleaned and fitted back after necessary paint work. c. All associated suction piping of lube oil pump (1 inch dia, 20 meters length FER and 15 meters length AER) to be repaired/ replaced with main machinery (04 x main engines, 03 x SSDGs and 04 x gear boxes). d. Lube oil pump discharge pipe to weather deck to be repaired/ replaced. e. All lines valves, elbows, and connectors for suction and discharge piping to be repaired/ replaced. f. All marine version line valves and accessories to be fitted for satisfactory operation. g. 01 x dirty lube oil hand pump to be overhauled/ replaced. h. All spares, special equipment / tools, accessories etc for repair/ replacement for said work to be arranged by the contractor. j. Any damage /in way removal/ defect / wear tear occur during the course of removal and installation of lube oil system is to be repaired/ met by contractor. |

| | | |
|-----|----------------------|--|
| 11. | Eligibility Criteria | a. The firm must visit onboard and carry out diagnosis/ inspections to establish the extent of required work. b. Firms not undertaking the visit onboard ship to see extent of work will not technically qualify. c. The firm must have sufficient experience of same kind of work of lube oil system onboard ship. d. NTN/ GST registered. |
| 12. | EDC | 30 Working days |
| 13. | Warranty | 01 year |
| 14. | Acceptance criteria | a. Dirty lube oil tank (500 Ltrs) b. Lube oil pump (220VAC 3Phase) c. Associated lube oil piping d. HATs/ SATs by SS. |

IT NO : IT/46/33/2024-25

IT SPECIFICATIONS FOR REPAIR/ REPLACEMENT OF SMOKE, HEAT & OPTICAL SMOKE DETECTORS AND MANUAL CALL POINTS – PMSS BASOL

| S No | Description | | |
|------|--------------------------------|--|-----------------------------|
| 1. | Parent Equipment | Fire Alarm System | |
| 2. | Sub Equipment | | |
| 3. | Assembly Component | Smoke, Heat & Optical Smoke Detectors And Manual Call Points | |
| 4. | Make | Syncro ASM China | |
| 5. | Model | MA80161M2 | |
| 6. | Quantity/ Item Details | Part No. | Description Qty |
| | | 58000-400 | Heat Detector 5 |
| | | ORB-OP-52028-APO | IS Optical Smoke Detector 2 |
| | | 58000-600 | Optical Smoke Detector 4 |
| | | 58100-971/ 58000-920 | Manual Call Point 4 |
| 7. | Justification | FWT | |
| 8. | Work Required/ Defect | Smoke Detector, Heat Detector, Optical Smoke Detector and Manual Call points are malfunctioning. Same are required to be repaired/ replaced for satisfactory operation of the system. | |
| 9. | Scope of work | a. Replacement of all detectors through trained technicians. b. Functional replacement can be undertaken for non-available/ obsolete component. c. Onboard test/ trials to be conducted after replacement. d. Spare(s)/ components required for repair work will be arranged by contractor. e. Contractor may inspect switching power supply/ module through onboard visit. f. Any growth work during replacement will be borne by the contractor. Ship will not provide any spare part/ additional amount in case of growth work. g. Any damage to the system during onboard testing of switching power supply will be borne by contractor. | |
| 10. | Technical specs (If any) | As per OEM manual/ Specs | |
| 11. | Eligibility Criteria | Suitable contractor having working experience on Electronics/ Electrical equipments with PMSA. | |
| 12. | EDC | 2 weeks | |
| 13. | Warranty | One year service and components warranty after successful trials. | |
| 14. | Acceptance Criteria | a. Successful test and trials onboard ship. b. Certified spares to be used for avoiding damage to ship systems. | |
| 15. | Any other relevant Information | SS may be contacted for any further query/ requirement. | |

IT SPECIFICATION – REPLACEMENT OF ENGINE OF SSDG NO-I - PMSS NUSRAT

| S No | IT Specifications | |
|------|--------------------------------|---|
| 1 | Ship's Name | PMSS NUSRAT |
| 2 | Parent Equipment | Power Generator |
| 3 | Sub Equipment/ System | SSG No 1 (110 KW) |
| 4 | Assembly/ Equipment | Engine |
| 5 | Make | DEUTZ |
| 6 | Model | D234V8 |
| 7 | Qty | 01 |
| 8 | Justification | Performance degraded |
| 9 | Work Required | Dismantling/ removal of existing engine from SSDG No 1 and installation/ commissioning of compatible CUMMINS engine on SSDG No 1 |
| 10 | Technical Spec | 110 KW 50 hz 380 V |
| 11 | Detailed Scope of works | <p>Scope of work is as under:</p> <p>a. Decouple and remove existing Deutz engine from SSG No 1 and unship.</p> <p>b. Install and commission refurbished CUMMINS (6CTA 8.3) engine on SSDG No 1, as per technical specifications.</p> <p>c. Alignments of CUMMINS engine is the responsibility of firm.</p> <p>d. Any additional piping for S/W, Lub oil, fuel is the responsibility of firm.</p> <p>e. Installation/ provision of start/ stop and engine parameters at remote and local position.</p> <p>f. Marine version engine is to be installed.</p> <p>g. Any additional/ essential accessories i.e S/W cooling pump, Heat exchanger, after cooler etc are to be arranged installed by the firm.</p> <p>h. Safeties of newly installed engine are to be tested and certificate is to be provided.</p> <p>j. Technical manual of newly installed engine is to be provided.</p> <p>k. Tools, special equipment/ accessories required for said repair/ maintenance are to arranged by the firm.</p> <p>l. Any damage/ defect/ were tear occurred during course of removal, repair and installation will repair by firm.</p> <p>m. Requirement of external services will be responsibility of firm.</p> <p>n. Install 25/50 hrs routine is to be carried out by the firm and spares required for initial 25/50 hrs routine are to be provided by the firm.</p> <p>p. NSN/ part numbers of essential spares including list of spares required for TOH and MOH are to be provided by the firm.</p> <p>q. 02 days training of SS w.r.t PMS routines will be arranged by the firm at ship premises.</p> <p>r. The firm must have experienced of same kind of work.</p> <p>s. The firm should be NTN/ GST registered.</p> |
| 12 | EDC | 10 x working days |
| 13 | Warranty | 01 x year |
| 14 | Acceptance Criteria | <p>a. Satisfactory work done by the firm.</p> <p>b. Satisfactory VA Report by FMG(ME).</p> <p>c. Satisfactory conducted POA test FMG(WE).</p> <p>d. No leakage/ unusual noise at full load trials:</p> <p>(1) 30% load for ½ hr.</p> <p>(2) 50% load for ½ hr.</p> <p>(3) 75% load for 1 hr.</p> <p>(4) 100% load for 4 hr.</p> <p>d. Satisfactory sea trials</p> |
| 15 | Any other relevant information | |

IT SPECIFICATION – TOP OVERHAUL ROUTINES OF SSDG NO 1 – PMSS REHMAT

| S No | IT Specifications | |
|------|--|--|
| 1. | Parent Equipment | Power Generation and Distribution |
| 2. | Sub Equipment | SSDG-1 |
| 3. | Assembly Component | All components/ Parts of SSDG |
| 4. | Make | CUMMINS (USA) |
| 5. | Model | 6CT 8.3C |
| 6. | Quantity | 01 in No |
| 7. | Justification i.e PMS/ Failure/ FWT etc | TOH routine is due at 6000Hrs |
| 8. | Work required/ Defect | Complete TOH to be carried out for safe operation of SSDG |
| 9. | Technical Specification | a. 110KW b. 380VAC 3 phase 50Hz c. 6 cylinders alongwith heat exchanger |
| 10. | Scope of Work | <p>Repair/ maintenance (TOH/ PMS routine) work of SSDG No 1 is required with provisioning of parts/ spares on firm arrangement. Details is appended below:</p> <p>Cylinder spaces: Inspect cylinder space for work/ scratches and decarburize piston crown and cylinder TDC area (Endo scope combustion chamber to be carried out)</p> <p>Cylinder heads: a. Check valve guides and cam/ cam shaft and replace if required. b. Replace valve stem seals. c. Decarburizing and reseating of valve to be carried out and tested for leak after fitting in cylinder heads. d. Inspect/ overhaul cylinder heads and liner and replace cylinder head gaskets alongwith piston rings. e. Repair/ replace water and oil transfer pipes and seals. f. Carry out compression test after completion of TOH.</p> <p>Valve gear: Inspect/ check valve gear (Tappet, rocker arm and adjusting screw for wearing out / replace if unsatisfactory) and tappet clearance to be adjusted as per OEM limits.</p> <p>Connecting rod bearing: a. Inspect/ measure connecting rod and big end bearing and replace for safe operation.</p> <p>Vibration damper: Check condition of damper/ fly wheel and its securing mechanism alongwith seal for safe operation and replace seal if required.</p> |

| | | |
|--|--|--|
| | | <p>Governor: Inspection/ clean fuel governor and set to work be carried out for SAT operation.</p> <p>Turbo charger: Remove, disassemble, decarburizing and clean turbo charger. Check components, measure cleanness and renew bearing. Check axial clearness of wheels and also pressure test at 10 bars before fitting on engine (New turbo overhauling kit to be used)</p> <p>Air ducting: Inspect/ clean air intake ducting for SAT operation.</p> <p>Air inter cooler: Renew, disassemble and clean (chemical cleaning) of air inter cooler for SAT operation and pressure test before installations for leaks and replace seals.</p> <p>Exhaust system: a. Clean exhaust manifold / galleries, pressure test and chemically clean. b. Inspect/ check exhaust piping thoroughly for any exhaust leakages and gaskets to be replaced. c. Lagging/ cladding to be carried out after completion of work.</p> <p>Fuel injection system: a. Check and adjust fuel injection time for proper function. b. Check and overhaul fuel injection pump for commencement of fuel delivery (phasing and calibration to be carried out). c. Pressure test of injectors for good spray pattern, replace injector nozzle. d. Defective injector sleeve to be replaced with new. e. Fuel injection and return lines to be verified for safe operation and replace if required. f. 02 x fuel filters to be replaced.</p> <p>Raw water pump: Repair/ maintenance and disassemble, inspect shaft, impeller, seals and bearing of sea water pump to be carried out.</p> <p>Coolant pump: Disassemble/ inspect of water body for SAT operation. Replace if any parts found unsatisfactory.</p> |
|--|--|--|

| | | |
|-----|----------------------|--|
| | | <p>Coolant cooler (Heat exchanger): a. Repair/ maintenance and disassemble, chemical clean and pressure test for leaks. Replace seals/ gaskets and defective nut/ bolts. b. Replace all zinc anodes.</p> <p>Starter and dynamo: Repair/ maintenance remove, disassemble and overhaul with replacement of defective parts component (Apply marine version varnish/ cloth and paper) Renew contacts point of armature power supply.</p> <p>Engine mounting: Check engine mounts and alignment of engine with alternator. New foundation/ coupling bolts to be used.</p> <p>Monitoring and control: a. Replace defective meter/ gauges of SSDG at local panel. b. Functional test of all safeties alongwith wiring to be carried out for safe operation and replace if required.</p> <p>Lubrication system: a. Replace O seals/ gaskets of oil pipes attached with sump lub oil cooler and filter assembly. b. Fit new lub oil filters prior & after initial running of SSDG (TOH work) c. Coolant is to be added after successful testing of cooling system. d. TOH standard kit is required to be arranged/ provided by the firm and the same will be inspected by the ship's staff in presence of the firm rep. f. OEM certified spares/ parts of TOH routines to be ensured. g. Instrument colour coding paint of mechanical system to be carried out. h. Provide complete list of replaced/ repaired items. Replaced items to be handed over to SS for survey. j. All spares, tools, special equipment / tools, accessories etc for repair and cleaning work are to be arranged by the contractor. k. Any damage / defect / wear tear occur during the course of removal and installation of SSDG is the responsibility of the concerned firm</p> |
| 11. | Eligibility Criteria | a. The firm must visit onboard and carry out diagnosis/ inspections to establish the extent of required work. b. Firms not undertaking the visit onboard ship to see extent of work will not technically qualify. c. The firm must have sufficient experience of same kind of work onboard corvette. |

| | | |
|-----|--------------------------------|---|
| | | d. Successful HATs and SATs at 1500 RPM and maximum load e. NTN/ GST registered. |
| 12. | EDC | 30 Working days |
| 13. | Warranty | 01 year after completion of successful full load trials |
| 14. | Acceptance criteria | a. SATs at full load for 04 hours i.e (1) 30% load for ½ hrs (2) 50% load for ½ hrs (3) 75% load for 1 hrs (4) 100% load for 4 hrs b. Acceptance by SS |
| 15. | Any other relevant information | Load van to be arranged by the firm for full load trials. |

Note: 100% Payment after completion by CNA

Director General
Pakistan Maritime Security Agency
Plot No 34-A, Dockyard Road
KARACHI
Telephone 021-48509194
Fax 99214625
E-Mail dpcc@pmsa.gov.pk

INVITATION TO TENDER GENERAL INSTRUCTIONS

1. CONDITIONS GOVERNING CONTRACT:

All Procurement / Repairs / Maintenance Contract, Local Purchase Order (LPO) and work ordered made as a result of this IT shall mean the agreement entered into between the parties that is buyer and the supplier will be in accordance with the PPRA rules 2004 or any amendment issued from time to time. Therefore all open tender inquiry will be uploaded on PPRA Website and publish on print media as the case may be.

2. SUBMISSION OF TENDER:

Firms shall submit their offers in two separate envelopes clearly marked as "**Commercial Offer**" and "**Technical Offer**" for open tender. Both envelopes shall be properly sealed bearing the signature of the bidder. Thereafter both these envelopes shall be placed in one bigger envelope. This envelope should bear the address of the D (P&CC).

- a. **TECHNICAL OFFER:** Should contain all relevant details and specifications as per the IT specifications. Literature / Brochure or any other relevant technical details may also be included in it. Technical offer should not contain the price. Indication of price in technical offer may render it null and void. The word "Technical Offer" should be clearly mentioned alongwith the tender No and date on the envelope containing the technical offer.
- b. **COMMERCIAL OFFER:** The price be quoted in figures as well as in words alongwith essential Literature / Brochures. The word "Commercial Offer", tender number should be clearly mentioned on the envelope. Taxes, duties, freight / transportation, insurance charges etc if any are to be indicated separately.
- c. **BID SECURITY:** All registered firms are exempted from provision of bid security upto Rs.500,000/- and unregistered firms have to provide bid security equals to 02% for bids amounting upto Rs.500,000/- in the shape of Pay Order in favor of "IT Sale Account DG PMSA". Furthermore, firms are required to deposit bid security not exceeding 05% of the bid price for bid value amounting more than Rs.500,000/-. Moreover, following guidelines will be followed:
 - i. 2% from registered firms.
 - ii. 5% from un-registered firms.
- d. Total price of the items quoted against the tender is to be clearly mentioned. It should also contains a **pay order 2% or 5% in the shape of pay order of the offered value** as earnest money. Cross cheque or cash is not acceptable in this case. The offer received without earnest money will be rejected.
- e. **SPECIAL INSTRUCTIONS:** Tender documents and its conditions may please be read point to point and understood properly before quoting. All tender conditions should be responded properly. In case of any deviation due to non-acceptance of tender conditions, the same should be highlighted alongwith changed offer / conditions. Tender may however be liable to be rejected.

PREPARATION OF QUOTATION

Please prepare quotation in this format In case of GST @ 18% or SST @ 15%:

| <u>S.NO</u> | <u>Description</u> | <u>Unit Price</u> | <u>Qty</u> | <u>Total</u> | <u>GST @ 18% or SST @ 15%.</u> | <u>T/Price</u> |
|-------------|--------------------|-------------------|------------|--------------|------------------------------------|----------------|
| | | | | | | |

Please prepare quotation in this format In case of without GST or SST:

| <u>S.NO</u> | <u>Description</u> | <u>Unit Price</u> | <u>Qty</u> | <u>Total</u> | <u>T/Price</u> |
|-------------|--------------------|-------------------|------------|--------------|----------------|
| | | | | | |

Without this format quotation will not be accepted.

3. DATE AND TIME FOR RECEIPT OF TENDER:

Tender must be dropped in tender Box placed at main gate. HQ PMSA will not accept any excuse of delay occurring due to whatsoever reason. Tender received after the time indicated in IT will not be entertained. The tender opening time, however, fall on next working day in case of closed / forced holiday or any other unforeseen event. Only authorized representatives of firm will be allowed to attend tender opening. **The tender received through Fax, E-Mail will not be acceptable.**

4. TENDER OPENING:

Technical offer will be opened as per scope of work on the date and time mentioned in the tender. Commercial offer shall be retained with technical officer. It will be opened at a later stage. All technical offers will be scrutinized by a Technical Scrutiny Report (TSR) committee nominated by HQ PMSA. The offers which are not as per the IT specification will be rejected. The firms recommended by TSR Committee will be allowed to attend the commercial opening for which date and time will be intimated separately.

5. VALIDITY OFFER:

The validity period of quotations must be indicated and should invariably be for 90 days extendable to 30 days from the date of opening of Technical offer.

6. QUOTING OF RATES:

Unit price of the item, GST/ SST or any other Govt tax and Total price all these should be indicated separately in Pak Rupees in a very clear manner as follows:

| S No | Description | Qty | U/Price | GST/SST/Taxes | Total Price |
|------|-------------|-----|---------|---------------|-------------|
|------|-------------|-----|---------|---------------|-------------|

7. ATL/ GST/ SST/ INCOME TAX NUMBER:

Only registered suppliers, who are on Active Taxpayers List (ATL) of FBR, are eligible to supply goods/ services to Government department. GST/SST and income tax number be clearly indicated on the quotations and all other relevant documents.

8. RETURN OF EARNEST MONEY:

- a. Earnest money to the unsuccessful bidders will be returned **one week** after commercial opening date.
- b. Earnest money to the firm who has won the purchase order/ work order & contract will be returned on submission of Bank Guarantee as per the contract.

9. TENDER FEE:

Each technical offer must be accompanied with Cash of **Rs.1,000/-** nonrefundable as tender fee (In favour of IT Sale Account DG PMSA) (**Separate Quotations required for each IT Specification**).

10. INSPECTION AUTHORITY:

Joint inspection of stores provided and work done will be carried out by committee appointed by HQ PMSA or as per the contract.

11. CONDITION OF STORES:

Spares, Stores, items and work done will be accepted on Warranty / Guarantee of the firm on Form DPL-15.

12. DOCUMENTS REQUIRED:

Following documents are required to be submitted alongwith the quotes where applicable:

- a. OEM / Authorized Dealer/Agent Certificate alongwith OEM Dealership Evidence as applicable.
- b. The Supplier is to provide OEM conformance certificate. In case of Fax or e-mail hard copy of conformance certificate must follow. On receipt of this PMSA HQ may approach the OEM to confirm the veracity of the documents submitted. Companies / firms rendering false OEM conformance certificate will be penalized as per rules in vogue.

13. SECURITY DEPOSIT / BANK GUARANTEE:

To ensure timely and correct supply of stores the firm will furnish an unconditional Bank Guarantee (BG) from a schedule bank for an amount of **10%** of the contract value (excluding taxes, duties / freight handling charges on a stamp paper of the value of (Rs.100/00) as per prescribed format in the shape of Bank Guarantee. Format of Bank Guarantee is at Annex „B“. Furthermore, it is imperative to mention that deposit of PBG for HMI and Core Exchange cases will be equal to the total value of engine.

14. CURRENT BANK STATEMENT:

For all contracts of Rs 1,000,000/- or more the firm is required to submit current bank statement of the firm.

15. INTEGRITY PACT:

Procurement exceeding Rs 1.00 M shall be subject to an integrity pact, between the Buyer and the Suppliers or Contractors.

16. CORRESPONDENCE:

All correspondence will be addressed to the Buyer. Correspondence with regard to payment or issue of delivery receipt may be addressed to D (P & CC) PMSA Karachi.

17. PRE SHIPMENT INSPECTION:

PMSA may send a team of Officers for the inspection of Major Equipment and Machinery items at OEM premises for inspection before dispatch if required at the Supplier's cost and arrangement.

18. AMENDMENT IN CONTRACT:

Contract may be amended / modified to include fresh clause modify the existing clauses with the mutual agreements by the Supplier and the Buyer such modifications shall form an integral part of the contract.

19. DISCREPANCY:

The Buyer will render a discrepancy report to all concerned within 45 days after receipt of stores for discrepancies found in the consignment. The quantities found short are to be made good by the Supplier free of cost.

20. PRICE VARIATION:

Price offered against IT are to be firm and final.

21. LIQUIDATED DAMAGES (LD):

Liquidated Damages upto 2% per month are liable to be imposed on the Suppliers by the Buyer in accordance with PPRA rules, if the stores supplied after the expiry of the delivery date without any valid reason. Total value of the LD shall not exceed 10% of the contract value.

22. RISK PURCHASE:

In the event of failure on the part of Supplier to comply with the contractual obligations the contract will be cancelled at the Risk and Expense of the Supplier in accordance with PPRA rules.

23. PENALTY:

In case of wrong supply of the item by the Supplier, a penalty of 10% of the contract value may be imposed by this HQ PMSA apart from any other penalties.

24. ALL RIGHTS RESERVED:

HQ PMSA may reject all bids or proposals at any time prior to the acceptance of a bid or proposal as per PPRA Rule 33(I).

25. PAYMENT:

The payment will be released through Controller of Naval Accounts (CNA) Karachi in Pak Rupees after completion of delivery / work.

26. **PARTIAL ORDER.**

All participating firms are to comply acceptance of partial order. Partial supply as per lowest rates will be awarded to the lowest bidder.

27. **DISQUALIFICATION:** Offers are liable to be rejected if:-

- a. Received after time and date specified in the IT.
- b. Offers are found conditional or incomplete in any respect.
- c. There is any deviation from the General / Special / Technical Instructions contained in this tender.
- d. Taxes and duties, Freight, Transportation and Insurance charges not indicated separately as per required price breakdown mentioned above.
- e. Pay Order with Commercial Offer and Cash with Technical Offer is not received.
- f. Multiple rates quoted against one item.
- g. Manufacture's relevant Brochures and technical details on major equipment, assemblies are not attached in support of specification.
- h. Offers (Technical / Commercial) are containing amendments / corrections / overwriting etc.
- j. National Tax No (NTN) and GST/SST No are not indicated on technical and commercial offer.
- k. If validity of offer is not quoted as required in IT or made subject to confirmation late.