



ऑयल इंडिया लिमिटेड
(भारत सरकार का उद्योग) पंजीकृत कार्यालय: दुर्गापुर, असम
Oil India Limited
(A Government of India Enterprise) Registered Office: Durgapur, Assam

Oil India Limited (RP)
2-A. District Shopping Centre
Saraswati Nagar, Basni
Jodhpur-342005,
Phone- 0291 -2729-473,
0291 -2729-466
Fax: 0291-2727050
Email: km_kumar@oilindia.in
erp_mm@oilindia.in

FORWARDING LETTER

TENDER NO. SJI2711P17 Dated 14.10.2016

INVITATION TO e-BID UNDER SINGLE STAGE TWO BID SYSTEM

Dear Sirs,

1.0 Oil India Limited, Rajasthan Project invites Bids for **Supply of one (1) number Multi Purpose Fire Tender at Dandewala Gas Processing Complex (DND-GPC), Dandewala, Dist. Jaisalmer, Rajasthan through its e-Procurement site**. The general details of tender can be viewed by opening the RFx [Tender] under RFx and Auctions. The details of items tendered can be found in the Item Data and details uploaded under Technical RFx.

The prescribed Bid Forms for submission of bids are available in the Technical RFx - > External Area - > Tender Documents

The tender will be governed by:

1. Technical specifications and Quantity, and any other notes as per **Annexure – IA.**
2. Bid Evaluation Criteria (BEC) as per **Annexure- IB.**
3. General terms and Conditions of the tender are as per attached document No. MM/LOCAL/E-01/2005.
4. The prescribed Bid Forms for submission of bids are available in the tender document folder. Technical Bid Checklist : Annexure-EEE, Response Entry Sheet : Annexure-FFF and Bank Details : Annexure-GGG must be filled-up and submitted along with the technical bid.
5. The tender is invited with firm price for the specified quantity. Further details of tender are given in Technical Rfx -> External Area - > Tender Documents

6. Any sum of money due and payable to the contractor (including Security Deposit refundable to them) under this or any other contract may be appropriated by Oil India Limited and set-off against any claim of Oil India Limited (or such other person or persons contracting through Oil India Limited) for payment of sum of money arising out of this contract or under any other contract made by the contractor with Oil India Limited (or such other person or persons contracting through Oil India Limited).
7. Amendments to the NIT after its issue will be published on OIL's website only. Revision, clarification, addendum, corrigendum, time extension etc. to the tender will be hosted on OIL website only. No separate notification shall be issued in the press. Prospective bidders are requested to visit website regularly to keep themselves updated.
8. Type of Bidding : **Single Stage Two Bid system**
9. Tender Fee : **INR 1,000.00**
10. Bid security : **INR 1,60,000.00**
11. Performance Security: : **Applicable (@10% of the PO value)**
12. Integrity Pact : **Applicable**
13. Bid Closing /Opening Date & Time : **Please refer to the e- Tender Portal**
14. Bid Validity : **Bid should be valid for 120 days from bid closing date.**
15. Bid Bond Validity : **Bid Bond should be valid up to 31.07.2017**
- (Bid bond format has been changed. Please submit bid bond as per revised format. Refer: MM/LOCAL/E-01/2005)**

Special Note:

1.0 Bidders are advised to take a note of **BID EVALUATION CRITERIA (BEC) under Annexure-IB (uploaded as separate file)** while preparing & submitting their offer.

2.0 Vendors having OIL's User ID & password may pay Tender Fee on-line through OIL's electronic Payment Gateway up to one week prior to the Bid closing date (or as amended in e-portal).

Vendors who do not have OIL's User ID & password, may generate User ID & password online by the Vendor by using the link for supplier enlistment given in OIL's e-tender

portal and then pay Tender Fee on-line through OIL's electronic Payment Gateway up to one week prior to the Bid closing date (or as amended in e-portal).

Alternatively application showing full address/email address with Tender Fee of INR 1,000.00 in the form of crossed "Payee Account only "Bank Draft/Bankers' Cheque drawn by Bank and valid for 90 days from the date of issue of the same or in the form of Indian Postal Orders in favour of OIL INDIA LIMITED and payable at Jodhpur is to be submitted to Chief Manager (M&C), Oil India Limited, Rajasthan Project, 2A, District Shopping Centre Saraswati Nagar, Basni, Jodhpur-342005, Rajasthan. Application shall be accepted only upto one week prior to the Bid closing date (or as amended in e-portal). The envelope containing the application for participation should clearly indicate "REQUEST FOR ISSUE OF USER ID AND PASSWORD FOR E TENDER NO. SJI2711P17 " for easy identification and timely issue of user ID and password. On receipt of requisite tender fee, USER_ID and initial PASSWORD will be communicated to the bidder (through e-mail) and will be allowed to participate in the tender through OIL's e- Procurement portal. No physical tender documents will be provided. Details of NIT can be viewed using "Guest Login" provided in the e-Procurement portal. The link to e-Procurement portal has been also provided through OIL's web site www.oil-india.com.

NOTE:

In case of MSE/PSUs/ Govt. Bodies / eligible institutions etc., they shall apply to Chief Manager (M&C), Oil India Limited, Rajasthan Project, 2A, District Shopping Centre Saraswati Nagar, Basni, Jodhpur-342005, Rajasthan for waiver of Tender Fee upto one week prior to the Bid closing date (or as amended in e-portal).

3.0 Please note that all tender forms and supporting documents are to be submitted through OIL's e-Procurement site only except following document/materials which are to be submitted manually in sealed envelope super scribed with Tender no. and Due date to Chief Manager (M&C), Oil India Limited, Rajasthan Project, 2A, District Shopping Centre, Saraswati Nagar, Basni, Jodhpur-342005, Rajasthan on or before the Bid Closing Date and Time mentioned in the Tender.

- a) Original Bid Security
- b) Detailed Catalogue (if any)
- c) Any other document required to be submitted in original as per tender requirement

All documents submitted in physical form should be signed on all pages by the authorised signatory of the bidder and to be submitted in duplicate.

4.0 The tender is invited under SINGLE STAGE-TWO BID SYSTEM. The bidders are required to submit both the "TECHNO-COMMERCIAL UNPRICED BID" and "PRICED BID" through electronic format in the OIL's e-Tender portal within the Bid Closing Date and Time stipulated in the e-Tender.

4.1 Please ensure that Technical Bid / all technical documents related to the tender are uploaded in the Technical RFx Response-> User -> Technical Bid only. The **TECHNO-COMMERCIAL UNPRICED BID** shall contain all techno-commercial details except

the prices. **Please note that no price details should be uploaded in** Technical RFX Response. **Offer not complying with above submission procedure will be rejected.**

4.2 In Technical Bid opening, only Technical Rfx will be opened. Therefore, the bidder should ensure that **TECHNO-COMMERCIAL UNPRICED BID** should contain details as mentioned in the technical specifications as well as BEC/ BRC and upload the same in the Technical RFX Response-> User - > Technical Bid. **No price should be given in above Technical Rfx otherwise the offer will be rejected.** Please go through the help document in details before uploading the document and ensure uploading of technical bid in the Technical RFX Response-> User - > Technical Bid only.

4.3 The “PRICE BID” must contain the price schedule and the bidder’s commercial terms and conditions. The prices of the items should be quoted in “Conditions Tab”.

5.0 Bidders are requested to examine all instructions, forms, terms and specifications in the bid. Failure to furnish all information required as per the NIT or submission of offers not substantially responsive to the bid in every respect will be at the bidders risk and may result in rejection of its offer without seeking any clarifications.

6.0 Bidders must ensure that their bid is uploaded in the system before the tender closing date and time. Also, they must ensure that above documents which are to be submitted in a sealed envelope are also submitted at the above mentioned address before 15:00 Hrs (IST) on the bid closing date failing which the offer shall be rejected.

7.0 Bid must be submitted electronically only through OIL’s e-procurement portal. Bid submitted in any other form will be rejected.

8.0 SINGLE STAGE TWO BID SYSTEM shall be followed for this tender and only the PRICED-BIDS of the bidders whose offers are commercially and technically acceptable shall be opened for further evaluation.

9.0 a) The Integrity Pact is applicable against this tender. OIL shall be entering into an Integrity Pact with the bidders as per format enclosed vide **Annexure-XII** of the tender document. This Integrity Pact proforma has been duly signed digitally by OIL’s competent signatory. The proforma has to be returned by the bidder (along with the technical bid) duly signed (digitally) by the same signatory who signed the bid, i.e., who is duly authorized to sign the bid. Any bid not accompanied by Integrity Pact Proforma duly signed (digitally) by the bidder shall be rejected straightway. Uploading the Integrity Pact with digital signature will be construed that all pages of the Integrity Pact has been signed by the bidder’s authorized signatory who sign the Bid.

b) The name of the OIL’s Independent External Monitors at present are as under:

**1. SHRI RAJIV MATHUR, IPS(Retd.),
e-Mail ID : rajivmathur23@gmail.com**

**2. SHRI SATYANANDA MISHRA, IAS(Retd.)
Former Chief Information Commissioner of India &**

Ex-Secretary, DOPT, Govt. of India
e-Mail ID : satyanandamishra@hotmail.com

10.0 The tender shall be governed by the Bid Evaluation Criteria given in enclosed **Annexure-IB**. However, if any of the Clauses of the Bid Evaluation Criteria contradict the Clauses of the tender and / or "General Terms & Conditions" as per Booklet No. MM/LOCAL/E-01/2005 elsewhere, those in the BEC shall prevail.

11.0 Materials to be supplied hereunder shall be new, unused, of recent make, of best quality & workmanship and shall be guaranteed by the seller against defects arising from faulty materials, workmanship or design. Defective goods / materials or parts notified by OIL to the seller shall be replaced immediately by the supplier at the supplier's expense at no extra cost to OIL.

12.0 Bidder to quote best delivery period

13.0 To ascertain the substantial responsiveness of the bid OIL reserves the right to ask the bidder for clarification in respect of clauses covered under BRC also and such clarifications fulfilling the BRC clauses in toto must be received on or before the deadline given by the company, failing which the offer will be summarily rejected.

14.0 All the Bids must be Digitally Signed using "Class 3" digital certificate (*e-commerce application*) with organisation name as per Indian IT Act obtained from the licensed Certifying Authorities operating under the Root Certifying Authority of India (RCAI), Controller of Certifying Authorities (CCA) of India.

15.0 The following points are deemed as "non-negotiable" and offer shall be rejected straightaway without seeking clarification in case of the following:

- i. **Validity of bid shorter than validity indicated in the tender.**
- ii. **Original Bid Security not received within the stipulated date and time mentioned in the tender.**
- iii. **Bid security with (a) Validity shorter than the validity indicated in tender and/or (b) Bid security amount lesser than the amount indicated in the tender.**
- iv. **In case the party refuses to sign the Integrity Pact.**

16.0 BIDDERS ARE REQUIRED TO QUOTE WITH MINIMUM VALIDITY OF 120 DAYS FROM THE BID CLOSING DATE AS PER NIT REQUIREMENT. BIDS WITH LESSER VALIDITY SHALL BE REJECTED.

17.0 The original bid security (Amount is mentioned above and also in Basic Data of the tender in OIL's e-portal) should reach Chief Manager (M&C), Oil India Limited, Rajasthan Project, 2A, District Shopping Centre Saraswati Nagar, Basni, Jodhpur-342005, Rajasthan. before bid closing date and time of the technical bid. Bid without original Bid Security will be rejected. The bidders who are exempted from submitting the Bid Bond should attach documentary evidence in the Collaboration folder as per General Terms and conditions for Global Tender (MM/LOCAL/E-01/2005). **The bid**

security shall be valid up to 31.07.2017. Please submit bid bond as per revised format.

Note : Bid Security may also be paid online.

18.0 Performance Security @10% of order value is applicable against this tender. Please refer clause 10.0 of Section A of General Terms and conditions for Global Tender (MM/LOCAL/E-01/2005).

19.0 **Benefits to Micro & Small Enterprises (MSEs) as per OIL's Public Procurement Policy for Micro and Small Enterprises (MSEs) shall be given. Bidders are requested to go through ANNEXURE – I of MM/LOCAL/E-01/2005 for E-Procurement of Indigenous Tenders for more details. MSE bidders are exempted from submission of Tender Fees and Bid Security/Earnest Money provided they are registered for the items they intend to quote.**

20.0 If Bank Guarantee is submitted towards Bid Security, then bidders have to ensure that the Bank Guarantee issuing bank indicate the name and detailed address (including e-mail) of their higher office from where confirmation towards genuineness of the Bank Guarantee can be obtained.

21.0 Please do refer the User Manual provided on the portal on the procedure How to create Response for submitting offer.

22.0 PURCHASE PREFERENCE : Purchase Preference will be applicable as per latest Govt. Guidelines. Bidders to take note of the same and quote accordingly. It is the bidder's responsibility to submit necessary documents from the Competent Authority to establish that they are eligible for purchase preference against this tender.

23.0 PRICE PREFERENCE : Price Preference will be applicable as per latest Govt. Guidelines. Bidders to take note of the same and quote accordingly. It is the bidder's responsibility to submit necessary documents from the Competent Authority to establish that they are eligible for price preference against this tender

NOTE:

Bidders should submit their bids (preferably in tabular form) explicitly mentioning compliance / non compliance to all the terms and conditions of NIT.

Yours Faithfully

Sd-

(KRISHNA MOHAN KUMAR)
MATERIALS MANAGER
FOR CHIEF MANAGER (M&C)
FOR DGM-SERVICES
FOR EXECUTIVE DIRECTOR (RP)



ऑयल इंडिया लिमिटेड
(भारत सरकार का उद्योग) पंजीकृत कार्यालय: दुर्गेश्वरनगर, अस्सम
Oil India Limited
(A Government of India Enterprise) Registered Office: Durgeshwaranagar, Assam

Oil India Limited (RP)
2-A. District Shopping Centre
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erp_mm@oilindia.in

ANNEXURE-IA

Tender No. & Date : SJI2711P17 Dated 14.10.2016

Bidding Type : **Single Stage Two Bid system**

Bid Closing on : As mentioned in e-portal

Technical Bid Opening on : As mentioned in e-portal

OIL INDIA LIMITED (Rajasthan Project) invites Indigenous Bids for items detailed below:

1.0 TECHNICAL SPECIFICATIONS WITH QUANTITY:

<u>SL. NO.</u> <u>MAT.</u> <u>CODE</u>	MATERIAL DESCRIPTION	QUANTITY	UOM
10 0C000198	Chassis for Multi Purpose Fire Tender	1	NO
20 0C000198	Fabrication of Multi Purpose Fire Tender	1	NO
30	Commissioning & Training of 10 & 20 above	1	AU

Notes:

1. For evaluation of offer Total cost of chassis (item no. 10), Fabrication (item no. 20) and Commissioning & Training (item no. 30) will be considered. Bidders are advised to quote for all items separately.

2. All items are to be procured from the same source.

3. Detailed technical specification of Multi Purpose Fire Tender is provided as under:

Part- ~~A~~+Chassis for %Multi Purpose Fire Tender+

Part- ~~B~~+Fabrication of %Multi Purpose Fire Tender+with Accessories

4. Please find BID EVALUATION CRITERIA (BEC) under Annexure-IB (uploaded as separate file).

PART – “A” CHASSIS FOR “MULTIPURPOSE FIRE TENDER”

Brand new 4x2 drive chassis for Fire Tender of TATA, Ashok Leyland or Equivalent make manufactured not prior to six months from the date of issuance of Letter of Intent (LOI). The bidder shall take special care in selecting and designing the Multi-Purpose Fire Tender considering the unit's application in rough terrain and typical oilfield roads. The offered model shall be latest and conforming to international quality standard norms, having specifications, fittings, accessories, etc. as under:

1. CHASSIS:

a	Drive & Cowl	4 x 2 Drive & Full Forward Control Cowl.
b	Engine	Min. 6 cylinder Water-cooled diesel engine.
c	Max. Output Power	Not less than 160 HP at rated rpm.
d	Max. Output Torque	Not less than 400NM at rated rpm.
e	Emission	Euro-III/BS-III or as applicable in the state of Rajasthan at the time of delivery of the vehicle.
f	Steering	Hydraulic Power Assisted Steering (Right Hand Steering).
g	Gearbox	Minimum 5 forward speed & 1 reverse speed.
h	Side PTO(as applicable)	Side Power take-off (Chassis should be attached with PTO) for driving the Hi Pressure Pump. It should be suitable to match engine and pump characteristic. It should be engaged by a separate lever in main cabin. Necessary support for PTO unit, shaft etc. should be provided. The drive assembly shall be dynamically balance.
i	PTO for the main water pump	Power take-off (PTO) unit for the main water pump shall be independent type. (Vas Make). The PTO operation shall be through Pneumatic as well as mechanical cable linkage.
j	Wheelbase	In the range of 4600 mm. to 5200mm.
k	GVW	Not less than 16000 Kg.
	Brake	Full air or Hydraulic power assisted Dual Circuit Service Brake and suitable Parking Brake.
l	Axles	Front - 1, Rear - 1(Drive axle).
m	Suspension	Semi elliptical leaf spring suspension.
n	Wheels & Tyres	Front- 2, Rear - 4 & Spare - 1, Tyre .Size - preferably 10.00 x 20 of adequate ply rating

2. DRIVER'S CABIN:

Details of Driver's Cabin should be as mentioned elsewhere in the Tender.

3. DIMENSIONS:

Full Unit:

Overall Length: Approx. 8500mm.

Max. Width: 2600 mm.

SJI2711P17 (8)

Max. Height: Not more than 3000mm (Unladen).

4. ADDITIONAL/OTHER FITMENTS & ACCESSORIES:

- i. All standard gauges and meters, Horn, Reversing Alarm, Lightings, Reflectors, Roof Lamps, Windscreen wipers, Sun shade, Glove box, Lockable fuel tank, Standard Tool Kit, 30T Capacity Hydraulic Jack with handle & wheel wrench, Mud flaps/guards, etc.
- ii. Rear View Mirror- 2 Nos.
- iii. Well-covered Battery Box, Tool box. Suitable storage box at suitable location.
- iv. Suitable Jaw & Pint type rear Towing Hook, mounting arrangement for spare wheel.
- v. First Aid Box, Fire Extinguisher, Licence Holder at suitable locations and other fittings required as per MV Act.

5. DOCUMENTATION AND BID SUBMISSION:

- A.** The following documents/literatures are to be submitted along with the bid:
 - i. Technical leaflet, to support the specifications provided in the bid. (All specifications, as desired, as well as Make, Model, Code, Type etc. of the offered Fire Tender Chassis shall clearly be defined in the bid. Submission of Technical Leaflet is not sufficient).
 - ii. A detailed Dimensional Drawing of the fire tender, showing among others overhang, seat size, leg space & sitting arrangement etc. as applicable.
- B.** The following documents /literatures are to be submitted along with the supply:
 - i. Temporary Registration, Insurance, Road Tax, Sale Letter in Form 21 & 22/22(A), etc. in the name of M/s OIL INDIA LIMITED, Rajasthan Project, Jodhpur as required under MV act for onward registration of the fire tender in Rajasthan.
 - ii. Checklist as per enclosed format (**CHECKLIST FOR FIRE TENDER CHASSIS**) shall be furnished along with the bid. In case of any contradicting specification provided elsewhere in the bid, **the specifications provided in the said checklist shall only be considered for bid evaluation.**

(Bid without the Technical Checklist (for Fire Tender Chassis) may be liable for rejection).

6. TECHNICAL CHECK LIST (For Fire Tender Chassis):

Part A TECHNICAL					
A 1.1 (FIRE TENDER CHASSIS)					
Sl. No.	PARAMETERS / REQUIREMENTS			BIDDER'S OFFER (To indicate details or yes/no, as applicable)	REMARKS, IF ANY
1	Make & Model of Fire Tender Chassis				
2	Gross Vehicle Weight (GVWR)				
3	Drive:				
4	Wheelbase:				
5	Overall Dimensions (Width, Height & Length) of complete unit:				
6	Ground Clearance:				
7	Laden Weight (Total weight of the unit)				
8	Engine	a	Make & Model		
		b	Max. Output Power		
		c	Max. Output Torque		
		d	Naturally Aspirated or Turbo Charged		
		e	Emission Norms		
		f	Control System (Electronic)		
9	Transmission (Main)	a	Make & Model		
		b	No. of gears		
10	Make & Model of Transfer Case, if any				
11	Total number of PTOs in operation				
12	(i) Make & Model of Side PTO				
	(ii) Make & Model of PTO for the main water pump				
13	Make, Model & Type of Steering System				
14	Minimum Turning Circle Radius (MTCR)				
15	Type of Front Suspension				
16	Type of Rear Suspension				
17	Axle Capacity	a	Front		
		b	Rear		
18	Type, Size of Wheel & Tyre	a	Front		
		b	Rear		
19	Type of Service Brake (S/Z-cam or not)				
20	Type of Wheel Brake Servos(screw type manual release or not)	a	Front		
		b	Rear		
21	Fuel Tank capacity				
22	Reversing Alarm with Blinker Lights				
23	Provision of Air Dryer in truck's pneumatic system.				

Part B <u>DOCUMENTATIONS B1.1 FIRE TENDER</u>			
Sl. No.	DESCRIPTIONS	DOCUMENT ENCLOSED (Yes or No)	REMARKS , IF ANY
1	Technical leaflets with detailed specifications, Make & Model of chassis, engine, transmission, transfer case (if any), PTOs, suspension, axle, steering, wheel & rim, brake, etc.		
2	Detailed dimensional layout drawing illustrating Driver's Cabin and all major items/ components.		
3	List of tools that shall be supplied under Standard Tool Kit for general maintenance of the fire tender.		
4	Checklist for Fire Tender Chassis as per enclosed Format.		

7. WARRANTY/GUARANTEE:

Notwithstanding the Guarantee/Warranty clause(s) mentioned elsewhere in the tender, complete units shall be under guarantee/warranty by the supplier for a minimum period of 1(one) year from the date of successful commissioning at site.

OIL reserves the right to inspect, test and if necessary, reject the fire tender or any part/parts after delivery at site, only if the said rejection is attributed to be the responsibility of the supplier. It shall, in no way be limited or waived by the reason that the fire tender was being previously inspected, tested and passed by OIL as per Para- 6 above.

8. DEVIATIONS FROM THE SPECIFICATIONS:

The bidder shall enclose comprehensive list of intended deviations from the technical specifications, of any clearly highlighting the reasons thereof, along with the bid. Deviations from the Technical specifications are intended, the same shall be confirmed in the offer. However, OIL reserves the right for acceptance or rejection of the deviation(s).

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Part – B Fabrication OF “Multi Purpose Fire Tender” With Accessories

1.0 SCOPE :

- 1.1 This specification covers the requirements regarding design, procurement, fabrication, testing and supply of Multi-Purpose Fire Tender to be used for fire fighting. The scope of supply shall be inclusive of, but not limited to the following.
- 1.1.1 Chassis
 - 1.1.2 A centrifugal type Water Pump of 3200 LPM discharge capacity at 10 Kg/cm² (M/s Godiva, UK Make)
 - 1.1.3 Auxiliary water pump (i.e. 3 or 6 Plunger Pump) of 150 LPM at 100 bar pressure.
 - 1.1.4 Water Ring Primer
 - 1.1.5 Exhaust Ejector Primer
 - 1.1.6 Power take-off unit for driving the main pump
 - 1.1.7 Water tank of capacity **4000** Litres capacity
 - 1.1.8 Foam Tank of capacity **1000** Litres capacity
 - 1.1.9 Dry Chemical Powder Vessel **500** Kg Capacity
 - 1.1.10 Water cum Foam monitor Variable Flow **500-750** GPM (UL Listed)
 - 1.1.11 Body Fabrication/ Works
 - 1.1.12 Control Panel
 - 1.1.13 Accessories and spares
 - 1.1.14 Piping, necessary controls etc. Complete
- 1.2 The chassis for the Multi-Purpose Fire Tender shall be procured & supplied by the Successful Bidder. The Successful Bidder shall be responsible for supplying all equipment / accessories and properly fixing them on the chassis as described in this specification. Other details and requirements which are not covered under this specification, but may be necessary to complete the “**MULTI-PURPOSE FIRE TENDER**” and/or to fulfil the operation/performance requirement shall be provided by the Successful Bidder, who will be responsible for the design and construction of the complete Unit to the full satisfaction of M/s Oil India Ltd.

2.0 GENERAL REQUIREMENTS:

- 2.1 The “**MULTI-PURPOSE FIRE TENDER**” including all accessories shall be designed, manufactured, tested etc. as per relevant Indian, International Standards, wherever applicable and as per sound engineering practice.
- 2.2 All the equipment and accessories shall be fixed on the Unit in a compact and neat manner and shall be so placed that each part is easily and readily accessible for use and maintenance. The centre of gravity shall be kept as low as possible.
- 2.3 The controls on control panel shall be so arranged that one man can operate all the controls.
- 2.4 The Successful Bidder shall provide a detailed description of the Multi-Purpose Fire Tender, a list of equipment to be furnished, and other construction and performance details to which the Multi-Purpose Fire Tender shall conform.
- 2.5 The detailed description of the “**MULTI-PURPOSE FIRE TENDER**” shall include, but shall not be limited to, estimated weight, wheelbase, turning clearance radius, principal dimensions, transmission, and axle ratios.

- 2.6 Responsibility for the **öMULTI-PURPOSE FIRE TENDERö** and equipment shall remain with the Successful Bidder until they are accepted by the OIL.
- 2.7 On initial delivery of the **öMULTI-PURPOSE FIRE TENDERö**, the Successful Bidder shall depute a qualified representative to demonstrate the **öMULTI-PURPOSE FIRE TENDERö** and provide initial instructions to representatives of OIL regarding the operation, care, and maintenance of the **öMULTI-PURPOSE FIRE TENDERö** and equipment supplied.
- 2.8 **INSPECTION & TESTING :**
- 2.8.1 Third Party Certification of Test Results:-The results of tests to be certified by OIL's Approved third party certification organization.
- 2.8.2 Prior to dispatch of Unit from Successful Bidder's shop, Stage inspection & testing shall be carried out by the Successful Bidder to the complete satisfaction of third party inspection agency as mentioned below :-

Stage	Scope of Inspection (But not limited to)
First stage	<p>Chassis & Materials Inspection: The successful bidder shall facilitate inspection of chassis by OIL's Engineers along with Third Party Inspection Agency for inspection of the Chassis & other materials to be used for fabrication of the MULTI-PURPOSE FIRE TENDER.</p> <ul style="list-style-type: none"> (i) Chassis Identification & physical verification of chassis No., engine No. etc. (ii) Verification of all document related to chassis procurement. (iii) Verification of all Documents related to Quality of material of tanks & DCP Vessel. (iv) Thickness measurement of Tanks & DCP Vessel plates and distinct marking of each material by ultrasonic thickness gauge. (v) Physical Identification of material of Tanks, Super structure, under structure etc. (vi) Physical Identification of Components / sub-assemblies identification, before fabrication. (vii) Cutting & marking of material sample for laboratory test (Chemical & Physical). (viii) Verification of all manufacturers/ fabricators document including documents of imported items. (ix) Calibration checking and documents of testing instruments, gauges, tools, accessories etc. (x) Positioning of Tanks & vessels on the chassis.
Second stage	<p><u>After completion of under structure:</u></p> <ul style="list-style-type: none"> (i) Hydro testing of Tanks (ii) Dye penetration test of all weld joints of Tanks (iii) Verification of laboratory test (Chemical & Physical) material Test Certificates (MTC) (iv) Positive Material Identification (PMI) of material (v) Construction of under- structure & super structure (vi) Water & Foam tank and DCP vessel. (vii) Documents related to Quality of material of tanks and thickness of tank's plates, radiography inspection report and stamped by recognised third party

	<p>inspector.</p> <p>(viii) Dimensions check of under structure on chassis, fabricated components as per specifications & approved drawings.</p> <p>(ix) Location for Placement of tank, fittings, lockers, pump, quality of fabrication.</p> <p>(x) Calibration checking of testing instruments, gauges, tools, accessories etc.</p>
Final stage	<p><u>After completion of panelling, fitment before final painting:</u></p> <p>(i) Stability checking of the unit after mounting all equipment and accessories. It should be free from undue rattling and vibration.</p> <p>(ii) Check proper functioning of all types of signal lights, alarms, Bell etc.</p> <p>(iii) Check quality of workmanship.</p> <p>(iv) Check calibration of instruments, gauges, tools, accessories etc.</p> <p>(v) Check operation of various levers, locks, caps, fitment of tanks, linkages, Markings and plumbing work.</p> <p>(vi) Performance test of all the systems, DCP, Pumps, Primer, PTOs, load & stability test of MULTI-PURPOSE FIRE TENDER,</p> <p>(vii) Testing of equipment / tools & Unit</p> <p>(viii) Checking of all relevant documents etc.</p>

- 2.8.3 **Stability:** Stability of Unit will be such that when fully equipped & laden, if the surface on which the Unit stands is tilted to either side at an angle of 27° from horizontal it will not overturn.
- 2.8.4 **Endurance Test:** The pump will be tested for a continuous period of four hours & water will not be replenished during this test, engine will not show signs of overheating. During this test, the temperature of engine should not exceed the rated temperature and that of lubricating oil 79°C.
- 2.8.5 **Priming Test:** The priming will be tested as per the latest standards & the system will be subjected to a test at a suction of vertical lift of 7 Mtrs measured from water level to the centre of suction eye of the pump at a rate of not less than 23-24 seconds.
- 2.8.6 **Hydraulic Testing:** All the pipings will be subjected to hydraulic test pressure of 18 Kg/cm² for a period of 2 hrs. The pump casing will be subjected to a hydraulic test pressure of a minimum 21 Kg/cm².
- 2.8.7 **Shower Test:** After completion of the fabrication, the Unit will be subjected to shower test as per the norms laid down under BIS. The Unit will not show any signs of leakages during this test.
- 2.8.8 **Road Test:** Unit will be tested for braking, acceleration & top speed by the inspecting officers.
After full laden of fire Tender.
- (i) Max. Speed attained.
 - (ii) Any rattling or abnormal sound.
- Stability test under fully equipped & loaded condition as per 1.
Hand Brake- Fully laden on 1 in 4 gradients in neutral gear.
- 2.8.9 All consumable (e.g. diesel fuel, engine lube oil, water etc.) shall be arranged by Successful Bidder at his own cost. Successful Bidder shall arrange all facilities to carry out inspection & testing.

- 2.8.10 OIL representatives shall have access at all reasonable times to Successful Bidder's works where the Unit or its accessories are being fabricated and tested.
- 2.8.11 Drawings (i.e. Skelton Structure, Water & Foam Tank drawing, General layout drawing, Load distribution chart, Electric circuit diagram etc.) & Quality assurance Plan (QAP) shall be approved by the Oil India Ltd. No supply shall be accepted unless drawings & Quality assurance Plan (QAP) are finally approved by the Oil India Ltd.
- 2.8.12 Third party Inspection agency shall carryout the Inspection based on approved drawings & approved QAP.
- 2.8.13 The inspection release note of Third part Inspection agency shall clearly stipulate that
Material /equipment have been inspected as per approved drawings & approved QAP.
- 2.8.14 All the tests/ stage inspections for Unit shall be witnessed by Oil India Ltd. representatives along with third party inspection agency.
- 2.8.15 **For Water & Foam Tanks:**
 - 2.8.15.1 Review of mill test certificates and Co-relation of raw materials before start of fabrication.
 - 2.8.15.2 DP test of all welds of water & Foam tanks.
 - 2.8.15.3 DP test of all nozzles to shell (reinforcement pads) for water & Foam tanks.
 - 2.8.15.4 Visual and dimensional check of water & Foam tanks before mounting on chassis.
 - 2.8.15.5 Hydraulic test of completed water & Foam tanks. Hydraulic test shall be carried out at 0.5 KG/CM² (G) at top of tanks. Pressure shall be held for the duration to permit complete inspection.
- 2.8.16 **For Piping :**
 - 2.8.16.1 Review of mill test certificates and co-relation of raw materials (for pipes, fittings, valves etc) before start of fabrication.
 - 2.8.16.2 DP test of butt welds and final run.
 - 2.8.16.3 DP test of all flanges to pipe welds.
 - 2.8.16.4 Radiographic examination of 10% butt welds (selected at random).
 - 2.8.16.5 Hydraulic test of piping installation on chassis.
 - 2.8.16.6 Visual and dimensional check.
- 2.8.17 **For Water Pump :**
 - 2.8.17.1 Review of mill test certificates for material of casing, impeller and shaft.
 - 2.8.17.2 Performance testing of pump to establish the performance curve at rated speed and power absorbed at rated conditions. Parameters at maximum & minimum allowable speeds shall be evaluated to establish performance curves at these speeds.
 - 2.8.17.3 The Pump shall be run for a period of four hours non-stop delivering the rated output with a lift of 3m . During the test all parameter like cooling system, temperature of the engine, oil, PTO

sump oil temperature shall match as per manufacturer's recommendation.

2.8.17.4 The pump casing and impeller shall be subjected to a hydraulic pressure 1.5 times of maximum operating pressure to detect leakage performance etc.

2.8.17.5 Priming Test: The primer shall be capable of lifting water at least 7m in less than 24 second.

2.8.18 Power Input At Rated Conditions :

2.8.18.1 Four-hour mechanical run test shall also be carried out.

2.8.18.2 Performance test shall be done on test bench with shop driver.

2.8.18.3 Four hour run test at rated conditions for verifying performance.

2.8.18.4 NPSH test.

2.8.18.5 Visual and dimensional check.

2.8.18.6 Performance test of auto water ring primer at rated conditions.

2.8.19 For Water Pump (Auxiliary Pump) :

2.8.19.1 All standard tests as specified by the Pump supplier.

NOTE: The above inspections & tests shall be carried out at pump manufacturer's / Fabricator's shop prior to dispatch. Third party inspection agency shall review the documents for the tests carried out by the manufacturer.

2.8.20 For PTO Units :

2.8.20.1 All standard tests as specified by the PTO supplier.

2.8.21 For Foam Cum Water Monitor :

2.8.21.1 Availability of the specified flow and pressure of water and Foam solution at the base flange for the monitor.

2.8.21.2 Review of mill certificates for material.

2.8.21.3 Hydro-testing of monitor at 25 KG/CM² pressure

2.8.21.4 Horizontal & vertical movements of monitor.

2.8.21.5 Spray/jet pattern of the monitor.

2.8.21.6 Foam expansion ratio of monitor.

2.8.21.7 Water & Foam throws.

2.8.21.8 Workmanship & painting.

2.8.22 For DCP Vessels:

2.8.22.1 Review of mill test certificates and co-relation of raw materials before start of fabrication.

2.8.22.2 DP test of root run and completed weld for all seams of vessels.

2.8.22.3 DP test of all nozzles to shell joints (i.e. reinforcement pads)

2.8.22.4 100% Radiographic examination of all welds of the vessels.

2.8.22.5 Hydrostatic test of each vessel at 21 Kg. /Cm² for 30 min.

2.8.22.6 Visual and dimensional check of vessels before mounting on chassis.

2.8.23 For DCP Piping

- 2.8.23.1 Review of mill test certificate and co-relation of raw materials (For pipes, fittings, valves etc.) before start of fabrication.
 - 2.8.23.2 DP test of root run and final run of all butt welds DP test of all socket welds.
 - 2.8.23.3 Radiographic examination of 10% butt welds (selected at random)
 - 2.8.23.4 Hydraulic test of piping before installation of chassis.
 - 2.8.23.5 Visual and dimensional check.
- 2.8.24 For “Multi-Purpose Fire Tender” (During Fabrication & Assembly) :**
- 2.8.24.1 Review of mill test certificates and co-relation of raw materials used for structure & body fabrication before start of fabrication.
 - 2.8.24.2 Inspection of framework for soundness of welding and fitment of chassis and dimensional check.
 - 2.8.24.3 Inspection for proper installation of pumps, tanks, piping with supports and their dimensional checks.
 - 2.8.24.4 Inspection for proper installation of DCP vessels, piping with supporting etc. and dimensional check.
 - 2.8.24.5 Visual inspection of raw materials for framework, cladding, flooring etc.
- 2.8.25 For Completed Unit :**
- 2.8.25.1 All consumables (Foam, DCP, Nitrogen gas in cylinders, fuel, engine lube oil, Water etc.) required during inspection & testing shall be arranged by Successful Bidder at his own cost. Successful Bidder shall arrange all facilities to carry out inspection & testing.
 - 2.8.25.2 Determination of actual payload on the chassis so as to confirm payload given by Successful Bidder in the bid. For determining actual laden weight, all tanks shall be full, all removable accessories will be on Unit with a crew of six.
 - 2.8.25.3 For determining actual payload all Tanks & vessel shall be charged to rated capacity, charged nitrogen cylinders on board, all removable accessories will be on Unit with crew of six.
 - 2.8.25.4 Static stability of the fully laden Unit shall be checked to ensure that no overturning occurs till Unit attains tilting of 35 ± 1 degrees from horizontal.
 - 2.8.25.5 Road test of the fully laden Unit shall be carried out to ensure the maximum speed, acceleration, turning radius, breaking ability as specified by chassis manufacture.
 - 2.8.25.6 Dimensional check of completed Unit. The overall height shall be measured both when Unit is laden with full payload and un-laden.
 - 2.8.25.7 Test to confirm functional capability of the **öMULTI-PURPOSE FIRE TENDERö** shall be carried out:
 - 2.8.25.7.1 Running of water pump at rated conditions while discharging water through various outlets individually and in combination.
 - 2.8.25.7.2 The pump shall be run for minimum 4 hours continuously at rated conditions.
 - 2.8.25.7.3 Functional testing of each water outlet (hose point / hose reel) individually and in combination.

- 2.8.25.7.4 Performance tests of Foam-cum water monitor.
- 2.8.25.7.5 Performance tests of Foam-cum-water monitor with water through hydrant inlets.
- 2.8.25.7.6 Functional testing of each hose outlet individually and in combination.
- 2.8.25.7.7 Vibrations at rotary parts

2.9 **Personnel Protection :**

- 2.9.1 Electrical insulation or isolation shall be provided where necessary in order to prevent electrical shock from onboard electrical systems.
- 2.9.2 Workmanship shall ensure an operating environment free of accessible sharp projections and edges.
- 2.9.3 Safety-related (caution, warning, danger) signs shall meet the requirements of job.

2.10 **Controls and Instructions :**

- 2.10.1 Illumination shall be provided for controls, switches, instruction plates, gauges, and instruments necessary for the operation of the **öMULTI-PURPOSE FIRE TENDERö** and the equipment provided on it.
- 2.10.2 All required signs, plates, and labels shall be permanent in nature and securely attached
- 2.10.3 No gauge or visual display shall be more than 84 in. (2.1 m) above the level where the operator stands to read the instrument.

2.11 **Unit Stability :**

- 2.11.1 When the **öMULTI-PURPOSE FIRE TENDERö** is loaded to its maximum in-service weight, the height of the Unit's center of gravity shall not exceed the chassis manufacturer's maximum limit.

2.12 **Weight Distribution :**

- 2.12.1 When the **öMULTI-PURPOSE FIRE TENDERö** is loaded to its maximum in-service weight, the front-to-rear weight distribution of the **öMULTI-PURPOSE FIRE TENDERö** as defined shall be within the limits set by the chassis manufacturer.
- 2.12.2 The axle loads shall not be more than the axle loads specified by the chassis manufacturer under full load and all other loading conditions.

2.13 **Load Distribution :**

- 2.13.1 Using the information supplied by the OIL, the **öMULTI-PURPOSE FIRE TENDERö** manufacturer shall calculate the load distribution for the **öMULTI-PURPOSE FIRE TENDERö**.
- 2.13.2 The manufacturer shall engineer the **öMULTI-PURPOSE FIRE TENDERö** to comply with the gross axle weight ratings (GAWR), the overall gross Unit weight rating (GVWR), and the chassis manufacturer's load balance guidelines.
- 2.13.3 **The total laden weight of the unit should not exceed the permissible GVW of Unit.**

2.14 **MULTI-PURPOSE FIRE TENDER Performance :**

2.14.1 The MULTI-PURPOSE FIRE TENDER shall meet all the requirements while stationary on a grade of 6 percent in any direction.

2.15 Serviceability :

2.15.1 Where special tools are required for routine service on any component of the MULTI-PURPOSE FIRE TENDER, such tools shall be provided with the MULTI-PURPOSE FIRE TENDER.

2.16 Road Tests :

2.16.1 Road tests shall be conducted in accordance with this section to verify that the completed MULTI-PURPOSE FIRE TENDER is capable of compliance roadability.

2.17 INFORMATION / DOCUMENTS REQUIRED FROM SUCCESSFUL BIDDER :

2.17.1 Any documentation provided with the MULTI-PURPOSE FIRE TENDER shall be permitted to be in printed format, electronic format, audiovisual format or a combination thereof.

2.17.2 All drawings & literature shall be kept in Proper folders.

2.17.3 All literature shall be on A-4 size paper and shall be properly laminated.

2.17.4 Each drawing shall be kept in separate pockets in folder. Contents in each pocket shall be labelled properly.

2.17.4.1 AFTER PLACEMENT OF ORDER :

The following documents are required to be submitted in 2 sets and to be approved prior to start of fabrication:

2.17.4.1.1 Flow diagram showing all piping tanks, pumps, valves etc.

2.17.4.1.2 GA & cross sectional drawings, characteristic curves and other details for water pump.

2.17.4.1.3 Internal Drawings for PTO Unit and other technical details.

2.17.4.1.4 Drawings for PTO system to drive pumps from engine.

2.17.4.1.5 Detailed Drawing for Foam-cum water monitor.

2.17.4.1.6 Fabrication drawings & data for water tanks.

2.17.4.1.7 Line diagram for electrical circuits.

2.17.4.1.8 Drawings showing layout of all equipment, lockers, cabin etc.

2.17.4.1.9 QAP incorporating the stipulated inspection and testing requirements.

2.17.4.2 AFTER COMPLETION OF ORDER (4 SETS) :

The manufacturer's record of MULTI-PURPOSE FIRE TENDER construction details, including the following Information:

2.17.4.2.1 M/s Oil India Ltd. name and address (Oil India Ltd., Rajasthan Project)

2.17.4.2.2 MULTI-PURPOSE FIRE TENDER manufacturer, model, and serial number

2.17.4.2.3 Chassis make, model, and serial number.

2.17.4.2.4 Front tyre size and total rated capacity in pounds (kilograms)

2.17.4.2.5 Rear tyre size and total rated capacity in pounds (kilograms)

2.17.4.2.6 Chassis weight distribution in pounds (kilograms) with water & manufacturer mounted equipment (front and rear)

- 2.17.4.2.7 Engine make, model, serial number, rated horsepower and related speed, and governed speed
- 2.17.4.2.8 Fuel tank capacity
- 2.17.4.2.9 Battery make, model, and capacity in cold cranking amps (CCA)
- 2.17.4.2.10 Chassis transmission make, model, and serial number
- 2.17.4.2.11 Chassis transmission PTO(s) make, model, and gear ratio
- 2.17.4.2.12 Pump make, model, rated capacity in liters per minute and serial number
- 2.17.4.2.13 Water & Foam tanks certified capacity in liters.
- 2.17.4.2.14 Paint manufacturer and paint number(s)
- 2.17.4.2.15 As built drawings of MULTI-PURPOSE FIRE TENDER
- 2.17.4.2.16 As built drawings for tanks.
- 2.17.4.2.17 Flow diagram.
- 2.17.4.2.18 GA & cross sectional drawings, characteristic curves and other details for water pump.
- 2.17.4.2.19 As built Drawings for Installation of PTO Units.
- 2.17.4.2.20 As built Drawing for Foam-cum water monitor.
- 2.17.4.2.21 As built Line diagram for electrical circuits.
- 2.17.4.2.22 All inspection and testing records for tank, pump, PTOs, piping, valves, monitor etc.
- 2.17.4.2.23 Operating and instruction manual for the MULTI-PURPOSE FIRE TENDER. This should also contain adequate information for all bought out items also.
- 2.17.4.2.24 Fire pump manufacturer's certification of suction capability
- 2.17.4.2.25 Fire pump, the pump manufacturer's certification of the hydrostatic test
- 2.17.4.2.26 Weight documents showing actual loading of "MULTI-PURPOSE FIRE TENDER" (with the full extinguishing media but without personnel, equipment, and hose).
- 2.17.4.2.27 Operations and Service Documentation :
 - 2.17.4.2.27.1 The Successful Bidder shall supply operation and service documentation covering the completed MULTI-PURPOSE FIRE TENDER as delivered and accepted.
 - 2.17.4.2.27.2 The documentation shall address at least the inspection, service, and operations of the "MULTI-PURPOSE FIRE TENDER" and all major components thereof.

3.0 MULTI-PURPOSE FIRE TENDER EQUIPMENT:

3.1 Equipment Storage :

- 3.1.1 A minimum of 20 ft³ (0.6 m³) of enclosed weather-resistant compartmentation meeting the requirements for the storage of equipment.

3.2 Hose Storage :

- 3.2.1 A minimum hose storage area of 6 ft³ (0.2 m³) for 2½ in. (65 mm) or larger fire hose that meets the requirements.

3.3 Minor Equipment :

3.3.1 Brackets or compartments shall be furnished so as to organize and mount the specified equipment.

3.3.2 Following equipments shall be supplied:

- 3.3.2.1 One first aid kit
- 3.3.2.2 One Nos. HDPE Long Spine Boards Stretcher.
- 3.3.2.3 Two combination spanner wrenches
- 3.3.2.4 Two hydrant wrench
- 3.3.2.5 Double female adapter, sized to fit 2½ in. (65 mm) conforming to IS-901/1993- 5 Nos. (In locker)
- 3.3.2.6 Double male adapter, sized to fit 2½ in. (65 mm) conforming to IS-901/1993- 5 Nos. (In locker)
- 3.3.2.7 Four Nos. wheel chocks with chain link, mounted in readily accessible locations, each designed to hold the MULTI-PURPOSE FIRE TENDER.
- 3.3.2.8 A 24 volts DC operated GRAND make blinker light bar (minimum three blinkers on each side) with PA system and siren shall be provided on top of the Unit with firm support and assembly shall be covered with SS grill. Assembly shall be operable from cabin- 1 No. (fitted on roof, operable from cabin)
- 3.3.2.9 Fog lamps powered by the battery of the Unit- 2 Nos. (Fitted on front of MULTI-PURPOSE FIRE TENDER. Switch in cabin).
- 3.3.2.10 Reversing lights-2 Nos. (At rear of chassis)
- 3.3.2.11 Strong Reversing siren connected with reverse gear of the Unit-1 set (Mounted on roof)
- 3.3.2.12 Search light with 100M length of cable with tripod etc. completes powered from main batteries - 1 set (mounted on roof)
- 3.3.2.13 All tools required for normal / routine maintenance of the Unit, which are not included with the kit of chassis -1 Set (In tool box under rear seat in cabin).
- 3.3.2.14 Description of Ordinary Hand Tools in tool box

Sr No	Description of Material	Quantity of Tools
1.	Set of pipe wrench of sizes: - 8",10",12",14",18"	01 each
2.	Double open end spanner (set of 6 mm to 32 mm) 6x7,8x9, 10x11, 12x13, 14x15, 16x17, 18x19, 20x22, 21x23, 22x24, 24x26, 24x27, 25x28, 30x32	01 Set
3.	Ring spanner set (06 mm to 32 mm) 6x7, 8x9, 10x11, 12x13, 14x15, 16x17, 18x19, 20x22, 21x23, 24x26, 24x27, 25x28, 30x32 (Total 13 Nos.)	01 Set
4.	Adjustable slide wrench (04 Nos.) (150 mm, 200, 250 mm & 300 mm)	01 each
5.	Allen keys (in L' shape) & (size in MM) 1.5, 2, 2.5, 3, 04, 05, 06, 07, 08, 09, 10 & 12 (12 Nos.)	01 each
6.	Combination pliers (02 nos.) 150 mm & 200 mm	01 each
7.	Flat file (02 Nos.) 150 mm & 200 mm	01 each

8.	Half round file (200 mm)	01 No.
9.	Hack saw frame with handle (for 12" long blade) along with 10 Nos. of blades.	01 Set
10.	Screw drivers (in mm) 04 Nos. 50x3, 100x4, 125x6, 150x8.	01 each
11.	Oil can 1/2 pint capacity	01 No.
12.	Steel measuring tape (05 meter long)	01 No.
13.	Nose Plier 150 mm	01 No.
14.	Bolt Cutter-12 Inch & 24 Inch with Spare Blades Set for Bolt Cutters (Taparia Make)	02 No. Each
15.	Tin Cutter of good quality	02 Nos.
16.	Tool box, to contain all above mentioned tools in proper condition. It should be drawer type with 03 pull out drawers and a tote tray with locking system.	01 No.
17.	Centre Punch	02 No.
18.	Threading Tools, 20 Pcs Taps And Die Set	01 Set

- 3.3.2.15 PESO/CCE approved removable spark arrestor (If chassis manufacturer not provided) fitted to the exhaust of the engine - 1 No.
- 3.3.2.16 Stainless Steel dividing breeching each having two 63MM female instantaneous type outlets, conforming to IS-905/1980- 1 Nos. (In Locker)
- 3.3.2.17 Stainless Steel collecting breeching each having two 63MM male instantaneous type outlets, conforming to IS-905/1980- 1 Nos. (In Locker)
- 3.3.2.18 Stainless Steel 3 way suction collecting head (With one 140MM outlet with round female threads and two female instantaneous type inlets), conforming to IS-904/1983-1 Nos. (In Locker).
- 3.3.2.19 Lightweight PVC rubber suction hose fitted with round thread male-female gun metal couplings. Length ó 4.5 meter, Diameter: as per pump suction - 4 Nos. (In compartment on top deck, Compartment shall be open able from top with latching system)
- 3.3.2.20 Suction strainer with foot valve size to suit suction hose as per IS: 907-1984 - 1 Nos. (In locker)
- 3.3.2.21 Stainless steel foot strainer-1 Nos. (In locker)
- 3.3.2.22 Suction Wrench to tighten suction hose as per IS:4643- 04 Nos. (In locker)
- 3.3.2.23 Hose clamps as per IS:5612 (Part-1-1977) - 2 Nos. (In locker)
- 3.3.2.24 TFT make hand controlled non-aspirating aqua fog / Foam type nozzles having spray/jet pattern with variable flow & low pressure features (suitable for both Foam & water)ó 2 Nos. (in locker)
- 3.3.2.25 Low pressure diffuser branch, conforming to IS-903/1993- 1 Nos. (In locker)
- 3.3.2.26 Fireman's axe with belt and pouches conforming to IS: 3650-1981- 02 Nos. (In locker)
- 3.3.2.27 Crow bar (IS: 704-1984)- 1 No. (In locker)
- 3.3.2.28 Sledge hammer - 1 No. (In locker)

- 3.3.2.29 Female Adopter (140 mm X 100 mm) - 02 Nos.
- 3.3.2.30 Spade 6 02 No.
- 3.3.2.31 Ceiling Fire hook as per IS:927:1981-2007 or latest - 1 No.
- 3.3.2.32 One 6 lb (2.7 kg) flathead or pick head axe mounted in a bracket fastened to the Tender
- 3.3.2.33 Door Breaker-01 No.
- 3.3.2.34 Carpenter saw-01 No.
- 3.3.2.35 Inline inductor 225 LPM-01 No.
- 3.3.2.36 Inline inductor 450 LPM- 01 No.
- 3.3.2.37 ISI marked 63MM SS male instantaneous couplings (threaded) with caps - 2 Sets.
- 3.3.2.38 ISI marked 63MM SS female instantaneous couplings (threaded) with caps - 2 Sets.
- 3.3.2.39 Hydrant key for 4" Gate valve : 10 nos.
- 3.3.2.40 Hydrant Key for 2 1/2" hydrant valve: 10 Nos.
- 3.3.2.41 Suction adopter (Stainless Steel) 4 inch round threaded by 63 mm instantaneous male coupling -02 Nos.
- 3.3.2.42 Portable Pressure gauge for checking of Tyre Air Pressure.
- 3.3.2.43 Hydraulic Jack (Floor Type)) 6 15 to 20 Ton capacity.
- 3.3.2.44 Curtain Nozzle with 63 MM Male Instantaneous, Stainless Steel with portable with Carrying Handle (Make: Newage/ Shah Bhogilal/ TFT/ Akron) - 04 Nos.
- 3.3.2.45 Zero Torque Nozzle: Multipurpose pistol grip lightweight aluminium alloy construction nozzle with Zero-Torque technology with various flow settings & spinning teeth. Flow: 115-360-475-550-750 LPM along with foam barrel attachment (Make: Newage/ Shah Bhogilal/ TFT/ Akron) -04 Nos.
- 3.3.2.46 Fast Action Nozzle Arrangement for Detent flows To shut off pressure assisted flush without shutting down Slide type valve for turbulence free flow moulded rubber B teeth for full fill Power for gasket grabber inlet screen Pistol type grip for holding Flow straightness for quality jet stream Suitable for flow of 450 LPM at 7kg/cm² with inlet of 63mm size Weight 1.6 kg approximately along with foam barrel attachment (Make: Newage/ Shah Bhogilal/ TFT/ Akron) - 04 No.
- 3.3.2.47 Dual Pressure Nozzle Fast Action Nozzle Standard & Emergency Mode with 185 -224 GPM @7 Kg/cm² (Make: Newage/ Shah Bhogilal/ TFT/ Akron) - 04 Nos.

4.0 CHASSIS AND UNIT COMPONENTS :

- 4.1 Welding and drilling on frame work of chassis are not allowed.
- 4.2 An engine hour-meter shall be provided.
- 4.3 An angle of approach and an angle of departure of at least 8 degrees shall be maintained at the front and the rear of the Unit when it is loaded.

4.4 POWER TAKE OFF UNITS :

- 4.4.1 Power take-off (PTO) unit for the main water pump shall be independent type. (Vas Make)

- 4.4.2 The PTO operation shall be through Pneumatic as well as mechanical cable linkage.
- 4.4.3 The power takes off unit for main water pump shall be of suitable model. The PTO shall be able to meet performance requirement of pump.
- 4.4.4 Successful Bidder shall submit a sketch showing the arrangement of PTO Unit for taking power from main engine on chassis to main water pump.
- 4.4.5 The drive assembly components (shaft, coupling etc) shall be dynamically balanced and the vibration at any of the rotary parts shall be minimum and in no case shall be more than 10mm/sec. Necessary modifications, to the standard drive system as available on the chassis, shall have to be done by the Successful Bidder so as to adopt the PTO Units in the system.

4.5 FOR OTHER WORK ON CHASSIS :

- 4.5.1 No part of the bodywork shall reduce ground clearance of Unit to less than 36cm. & not increase the overall width to more than 2.60M. The highest part of the Unit with the monitor mounted on it shall not exceed 3.60M from the ground level. The construction of super-structure shall not reduce the angles of approach below 30 degree.
- 4.5.2 3M/Hi-tech/ Zenith make anti-vibration rubber mats shall be provided while mounting the tanks etc. on the chassis.
- 4.5.3 Reflective stripe(s) shall be affixed to the perimeter of the unit as per MVA.
- 4.5.4 Arrangement shall be made on Dashboard opposite to the fire officers seat to fix a Motorola mobile wireless set of 25W capacity. Power supply shall be provided from Unit battery. M/s Oil India Ltd. shall fit wireless set later.

4.6 Optical Warning Devices :

- 4.6.1 MULTI-PURPOSE FIRE TENDER shall have a system of optical warning devices
- 4.6.2 The optical warning system shall consist of an upper and a lower warning level.
- 4.6.3 The four zones shall be designated A, B, C, and D in a clockwise direction with zone A to the front of the MULTI-PURPOSE FIRE TENDER in accordance with Figure 4.8.3.2.

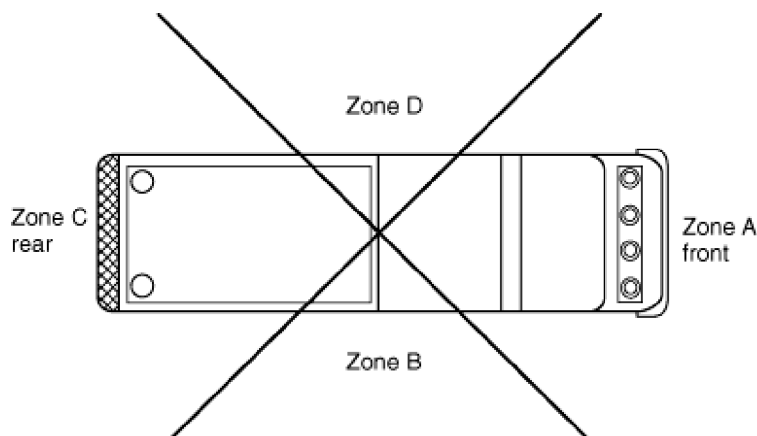


FIGURE: Warning Zones for Optical Warning Devices

- 4.6.4 Each optical warning device shall be installed on the MULTI-PURPOSE FIRE TENDER and connected to the MULTI-PURPOSE FIRE TENDER's electrical system in accordance with the requirements
- 4.6.5 A master optical warning device switch that energizes all of the optical warning devices shall be provided in driver's cabin.
- 4.6.6 The optical warning system on the MULTI-PURPOSE FIRE TENDER shall be capable of two separate signaling modes during emergency operations.
- 4.6.7 One mode shall signal to drivers and pedestrians that the MULTI-PURPOSE FIRE TENDER is responding to an emergency and is calling for the right-of-way.
- 4.6.8 One mode shall signal that the MULTI-PURPOSE FIRE TENDER is stopped and is blocking the right-of-way.
- 4.6.9 A switching system shall be provided that senses the position of the parking brake or the park position of an automatic transmission.
- 4.6.10 When the master optical warning system switch is closed and the parking brake is released or the automatic transmission is not in park, the warning devices signaling the call for the right-of-way shall be energized.
- 4.6.11 When the master optical warning system switch is closed and the parking brake is on or the automatic transmission is in park, the warning devices signaling the blockage of the right-of-way shall be energized.
- 4.6.12 The system shall be permitted to have a method of modifying the two signaling modes.
- 4.6.13 The optical warning devices shall be constructed or arranged so as to avoid the projection of light, either directly or through mirrors, into any driving or crew compartment(s).
- 4.6.14 The front optical warning devices shall be placed so as to maintain the maximum possible separation from the headlights.
- 4.6.15 The optical sources on each level shall be of sufficient number and arranged so that failure of a single optical source does not create a measurement point, in any zone on the same level as the failed optical source, without a warning signal at a distance of 100 ft (30 m) from the geometric center of the MULTI-PURPOSE FIRE TENDER.
- 4.6.16 Flash Rate.
 - 4.6.16.1 The minimum flash rate of any optical source shall be 75 flashes per minute, and the minimum number of flashes at any measurement point shall be 150 flashes per minute.
- 4.6.17 Color of Warning Lights.
 - 4.6.17.1 Permissible colors or combinations of colors in each zone, within the constraints imposed by applicable laws and regulations, shall be as shown in Table.

Table Zone Colors		
Color	Calling for Right-of-Way	Blocking Right-of-Way
Red	Any zone	Any zone
Blue	Any zone	Any zone
Yellow	Any zone except A	Any zone

White	Any zone except C	Not permitted
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4.6.18 Audible Warning Devices :

- 4.6.18.1 Audible warning equipment in the form of at least one automotive traffic horn and one electric or electronic siren shall be provided.
- 4.6.18.2 A means shall be provided to allow the activation of the siren within convenient reach of the driver.

4.7 Work Lighting :

4.7.1 Ground Lighting :

- 4.7.1.1 The work area immediately behind the Unit shall be illuminated
- 4.7.1.2 The "MULTI-PURPOSE FIRE TENDER" shall be equipped with lighting that is capable of providing illumination on ground areas within 30 in. (800 mm) of the edge of the MULTI-PURPOSE FIRE TENDER in areas designed for personnel to climb onto the MULTI-PURPOSE FIRE TENDER or descend from the MULTI-PURPOSE FIRE TENDER to the ground level.
- 4.7.1.3 All other ground area lighting shall be switchable.
- 4.7.1.4 Surface Lighting: The MULTI-PURPOSE FIRE TENDER shall have sufficient lighting on all work surfaces, steps, and walkways.
- 4.7.1.5 Interior Lighting: The MULTI-PURPOSE FIRE TENDER shall have sufficient lighting to provide in the driving and crew compartments.
- 4.7.1.6 Compartment Lighting Each engine compartment and pump compartment shall have a light.
- 4.7.1.7 Each enclosed tool and equipment compartment greater than 4 ft³ (0.1 m³) in volume and having an opening greater than 144 in.² (0.9 m²) shall have an average minimum level of lighting.
- 4.7.1.8 Switches for all work lighting shall be readily accessible.
- 4.7.1.9 The lights shall be arranged or protected to minimize accidental breakage.

4.7.2 Backup Alarm (Reverse Horn) :

- 4.7.2.1 An electric or electronic backup alarm (Reverse Horn) with light indication shall be provided that meets the Type D (87 dBA) requirements.
- 4.7.3 The MULTI-PURPOSE FIRE TENDER shall be equipped with all legally required stop, tail, and directional lights.
- 4.7.4 Directional lights shall be visible from the front, sides, and rear of the MULTI-PURPOSE FIRE TENDER.
- 4.7.5 Equipment shall not be mounted in a manner that obscures the stop, tail, or directional lights.

5.0 DRIVING AND CREW AREAS:

5.1 General :

- 5.1.1 Each crew riding position shall be within a fully enclosed personnel area.
- 5.1.2 All interior crew and driving compartment door handles shall be designed and installed to protect against accidental or inadvertent opening.
- 5.1.3 **Means of Escape :**
 - 5.1.3.1 Any interior area to be occupied by personnel shall have a minimum of two means of escape.
 - 5.1.3.2 Each opening shall be large enough for a person to escape through the opening.
- 5.1.4 **Instrumentation and Controls :**
 - 5.1.4.1 All the standard instrumentation and controls shall be mounted in the driving compartment and shall be identified and visible to the driver while seated.
- 5.1.5 Controls and switches that are expected to be operated by the driver while the MULTI-PURPOSE FIRE TENDER is in motion shall be within convenient reach for the driver.
- 5.1.6 There shall be two doors in the cabin, sized generously with proper arrangement for embarking and disembarking of crewmembers. The doors shall open outwards and hung forward and shall have levers for unlatching from outside and inside. The doors shall be provided with shatterproof safety glasses which can be raised / lowered by winding type mechanism.
- 5.1.7 First aid box made of fiber glass/ aluminum suitable for 10 persons shall be provided in the cabin. First aid box shall be suitably mounted in the cabin at easily accessible location.
- 5.1.8 Non slip type steps & grab rails shall be provided in the cabin to assist the crew members to get in & out. Front side of the cabin shall have glass paneling so that the crew can have an all-round view.
- 5.1.9 The cabin structure shall be so designed so as to avoid any vibration / rattling / deformation in the intended usage of the Unit. The entire floor of the cabin shall be provided with 3M make vinyl matting of minimum 6MM thickness with anti-skid features.
- 5.1.10 Battery shall be placed in totally enclosed box with spark proof gland for cable entry with battery cut-Off switch. Installed battery shall have a charging facility from external source at its location itself.

5.2 Seating arrangement

- 5.2.1 Seating arrangement for 6 persons shall be provided in cabin.
- 5.2.2 For Driver & Officer In-charge each - öHO Bostrom, USA / Ziamatic/ USSC Valor, USA makeö
- 5.2.3 For Crew (02 Nos.) - öHO Bostrom, USA / Ziamatic/ USSC Valor, USA makeö
- 5.2.4 For Crew (02 Nos.) - öHO Bostrom, USA/ Ziamatic/ USSC Valor, USA makeö

6.0 BODY, COMPARTMENTS AND EQUIPMENT MOUNTING:

6.1 STRUCTURE / FRAME WORK :

- 6.1.1 The structure/frame work on chassis & crew cabin shall be of welded construction and made from 30 mm X 30 mm X1.6 mm hollow square section of **SS-316L** and distance between each horizontal and vertical square shall be maximum 400 mm. Cross supporting members of the panelling shall be made of SS-316L channels of 75 mm X 5 mm thickness
- 6.1.2 The entire roof of the Unit including the crew cabin top, entire rear, crew cabin floor, locker floor and sides shall be made from 2 MM of **SS- 316L** sheets suitably treated for slippage and these shall be bolted to the frame for ease in removal of the tank for repairs. The roof of the cabins should be rigid enough to take the weight of two persons without deforming the roof sheeting.
- 6.1.3 Area around the monitors operation shall be provided with 16 SWG anodized aluminium-checked plate (in addition to the 2 mm Aluminium sheets) and shall be bolted to the frame.
- 6.1.4 Proper access ladder with Grab rails and non-skid steps shall be provided to give access to the roof for approaching to the manholes for tank and monitor etc.
- 6.1.5 Access handrails shall be provided at each entrance to a driving or crew compartment and at each position where steps or ladders for climbing are located. Access handrails shall be constructed of, or covered with, a slip-resistant, non-corrosive material. Handrails shall be between 1 in. and 1-5/8 in. (25 mm and 41 mm) in diameter and have a minimum clearance between the handrails and any surface of at least 2 in. (51 mm).
- 6.1.6 All handrails shall be designed and mounted to reduce the possibility of hand slippage and to avoid snagging of hose, equipment, or clothing.
- 6.1.7 Single Roller type Sun Shade Screen Assembly and long arm outside fitting rear view mirrors shall be fitted to cabin.
- 6.1.8 Proper draining arrangements shall be provided on the entire roof, crew cabin and inside the lockers.

6.2 LOCKERS :

- 6.2.1 Size and number of locker shall be decided such that on either side 15 nos. 22.5 m length fire hose can be easily accommodated in single layer and equipments may be accommodated in maximum two layers. Sufficient numbers of lockers shall be provided to accommodate all the equipment/accessories in an easily accessible manner.
- 6.2.2 All lockers shall be provided with Roller type shutter doors. The shutters shall have smooth operation. The aluminium shutters shall be dust & water proof of **M/s. MCD, France** imported make only made of extruded aluminium & duly hard anodized.
- 6.2.3 Roller shutters shall be of hollow rectangular shaped & made from aluminium inter-changeable links connected by means of plastic profiles.
- 6.2.4 Sealing of roller shutter shall be watertight when closed.

- 6.2.5 Roller shutters shall be inward rolling type and shall be provided with guide rails over entire length on both sides to make them torsion free.
- 6.2.6 When shutters are rolled, unobstructed access should be available to the equipment & hoses.
- 6.2.7 Shutters should open in all positions of the Unit even in rough terrains.
- 6.2.8 Roller shutters shall have locking arrangement to prevent accidental opening during movement of the Unit.
- 6.2.9 **Spare lock – 10 Nos. shall be provided.**
- 6.2.10 All the lockers shall be illuminated by **MCD make LED lightning system.**
- 6.2.11 All the lockers shall be fitted with internal lighting, which shall be capable of being automatically switched, :ONØ and :OFFØ by the opening of shutters. A master switch for isolating the locker lighting circuit shall also be fitted in the driverØs cabin.
- 6.2.12 Lockers shall have arrangement for self draining of any water entering inside
- 6.2.13 Sufficient number of lockers shall be provided for storage of all accessories listed. Lockers shall also be provided to accommodate 4 nos., 10 kg DCP extinguishers.
- 6.2.14 Lockers shall be accessible from ground level by a man of average height (1.67M). All the Lockers shall be provided with 3M make, 4MM thick, vulcanized synthetic rubber mat at bottom and up-to 12 inch on three sides.
- 6.2.15 The hose storage area(s) shall be reinforced at the corners.
- 6.2.16 The bottom shall be made of removable sections fabricated from noncorrosive materials.
- 6.2.17 The bottom shall be constructed to prevent the accumulation of water and allow ventilation to aid in drying of hose.
- 6.2.18 The interior shall be smooth and free from all projections, such as nuts, sharp angles, or brackets that might cause damage to the hose.
- 6.2.19 Ladders and equipment holders shall be placed so as not to obstruct the laying or removal of hose from the storage area.
- 6.3 **Compartmentation :**
 - 6.3.1 Any enclosed external compartments shall be weather resistant and ventilated and have provisions for drainage of moisture.
 - 6.3.2 All electrical junctions or wiring within compartments shall be protected from mechanical damage resulting from equipment stored in the compartment.
- 6.4 **Equipment compartments:**
 - 6.4.1 Equipment holders or compartments shall be provided for all tools, equipment, and other items that are on the MULTI-PURPOSE FIRE TENDER.
 - 6.4.2 Equipment holders shall be attached and shall be designed so that equipment remains in place under all Unit operating conditions.
 - 6.4.3 All tools and equipment shall be readily accessible.
- 6.5 **Pump and Plumbing Access :**
 - 6.5.1 **WATER & FOAM PIPINGS:**
 - 6.5.1.1 Water & Foam piping shall be of SS-316L grade.
 - 6.5.1.2 Pipes, fittings and valves in the water circuit that will come in contact with Foam solution (water/Foam mixture) shall be of SS-316L.

- 6.5.1.3 Stainless Steel lines joint - The bolting (studs, bolts) at break flanges shall be of SS-316L with SS washers.
- 6.5.1.4 A flow chart/schematic diagram shall be made and supplied with the MULTI-PURPOSE FIRE TENDER.
- 6.6 One or more doors or panels that open or are removable without the use of tools shall be provided to allow visual inspection or access for checking the fire pump and plumbing area(If required).
- 6.7 All valves, gauges, controls, and other plumbing equipment shall be accessible for service and replacement.
- 6.8 The clear space required by the pump manufacturer to perform in-truck overhaul and maintenance shall be provided.
- 6.9 **Stepping, Standing and Walking Surfaces :**
 - 6.9.1 Steps, platforms, or permanently attached ladders shall be provided so that fire fighters have access to all working and storage areas of the MULTI-PURPOSE FIRE TENDER.
 - 6.9.2 The maximum stepping height shall not exceed 18 in. (460 mm), with the exception of the ground to first step, which shall not exceed 24 in. (610 mm).
 - 6.9.3 All ladders shall have at least 7 in. (175 mm) of clearance between any rung and the body or other obstruction.
 - 6.9.4 All steps, platforms, or ladders shall sustain a minimum static load of 500 lb (227 kg) without deformation.
- 6.10 All materials used for exterior surfaces designated as stepping, standing, and walking areas and all interior steps shall have slip resistance.
- 6.11 All materials used for interior floors shall have slip resistance.
- 6.12 **Access Handrails :**
 - 6.12.1 Access handrails shall be provided at each entrance to a driving or crew compartment and at each position where steps or ladders for climbing are located.
 - 6.12.2 Access handrails shall be constructed of, or covered with, a slip-resistant, noncorrosive material i.e. Aluminum / SS.
 - 6.12.3 Handrails shall be between 1 in. and 1 in. (25 mm and 42 mm) in diameter and have a minimum clearance between the handrails and any surface of at least 2 in. (52 mm).
 - 6.12.4 All handrails shall be designed and mounted to reduce the possibility of hand slippage and to avoid snagging of hose, equipment, or clothing.
- 6.13 **PAINTING AND MARKING :**
 - 6.13.1 Unit and monitor should be painted with 2 coats of zinc phosphate epoxy primer each of 50 microns DFT and two coats of polyurethane finished red paint each coat of 50 microns DFT.
 - 6.13.2 All the lockers / cabins shall be provided with Stainless steel Name Plates with letters itched/ embossed on it boldly indicating the content.
 - 6.13.3 Water lines should be painted with of zinc phosphate epoxy primer each of 50 microns DFT and two coats of polyurethane finished paint each coat of 50 microns DFT. Water lines shall be painted red in colour.
 - 6.13.4 Paint shall be of Asian/Burger/Akzonoble/3M make only.
 - 6.13.5 M/s Oil India Ltd. emblem in original colour together with name (in Hindi and English) shall be written in golden yellow colour on both sides of the Unit.

- 6.13.6 On the front of the Unit "MULTI-PURPOSE FIRE TENDER" shall be written IN ENGLISH.
- 6.13.7 The inside of lockers shall be painted in pale Cream colour.
- 6.13.8 The chassis frame shall be painted black and wheel arch shall be painted white.
- 6.13.9 Mud flappers of sufficient length and width shall be provided at wheels.
- 6.13.10 Under frame of Chassis shall be painted with chlorinated rubber paint.
- 6.13.11 The Unit shall be clearly having the following marks at suitable locations.
 - (a) Manufacturer's name & trade mark.
 - (b) Year of manufacture
 - (c) Pump serial numbers and capacities.
 - (d) Capacity of water tank in litres.
 - (e) Engine and chassis number.
 - (f) All instrument control & valves shall be identified with properly itched metallic Name plates.
 - (g) All valves and hoses inlet and outlet shall also be identified by suitable metallic Nameplates.
- 6.13.12 All exposed ferrous metal surfaces that are not plated or stainless steel shall be cleaned and prepared and shall be painted or coated.
- 6.13.13 The paint or coating, including any primer, shall be applied in accordance with the paint or coating manufacturer's recommendation.
- 6.13.14 A reflective stripe(s) shall be affixed to the perimeter of the MULTI-PURPOSE FIRE TENDER.
- 6.13.15 The stripe or combination of stripes shall be a minimum of 4 in. (100 mm) in total width and shall conform the requirements.
- 6.13.16 At least 50 percent of the cab and body length on each side, at least 50 percent of the width of the rear, and at least 25 percent of the width of the front of the MULTI-PURPOSE FIRE TENDER shall have the reflective material affixed to it.

7.0 PUMPS:

- 7.1 **Auxiliary Pump (i. e. Plunger Pump) :**
 - 7.1.1 CE certified additional Plunger pump will be provided & will be of 150LPM @ 100 bar capacity. for water-mist generator with delivery assembly consist of spray gun, high pressure hose reel of 35 meter and high pressure hose etc.
 - 7.1.2 The pump will be a three or six plunger positive displacement type working to the capacity at not more than 1000 RPM.
 - 7.1.3 A by-pass for letting the water back to the tank will be provided to release excess pressure generated due to shutting of the hand lines or while discharging 150 LPM @40 bar or 75 LPM @100 bar individually.
 - 7.1.4 The pump will be guaranteed for five years or minimum life of 5000 Hrs. whichever is later of operation.
 - 7.1.5 The pump will have double seal on each plunger with low pressure intermediate chamber to keep the water seals cool & lubricated.
 - 7.1.6 This system will also permit to re-circulate any leakage from the high pressure back to pump inlet.
 - 7.1.7 The pump will have synthesized pistons of ceramic.

- 7.1.8 The connecting rods would be of an alloy which has low attrition co-efficient, high wear resistance & high anti seize up properties.
- 7.1.9 Hydraulic structure would be designed to simplify scheduled maintenance procedures (gasket & valve replacement).
- 7.1.10 The pump suction line will have inline mesh filters of OEM.
- 7.1.11 The pump will have Safety relief valve of OEM.
- 7.1.12 The pump discharge line will have Pulsation dampener for smooth flow
- 7.1.13 The pump will deliver water to hose reel.
- 7.1.14 Provision/ connection to be provided with foam suction also.

7.1.15 **UHP HOSE REELS:**

- 7.1.15.1 There will be two hose reels of 60 Mtrs. lengths each.
- 7.1.15.2 The high pressure pump will operate through a separate hose reel which will be provided at a suitable place on the Unit.
- 7.1.15.3 The hose used for the hose reel would be rated for 130 bar working pressure (180 bar test pressure) & will be of min. 16mm ID.
- 7.1.15.4 It will have geared winding system.
- 7.1.15.5 At the discharge end of the hose reels, high-pressure fog gun will be provided which will be capable of discharging 75 LPM @ 100 bar pressure in jet or Fog patterns.
- 7.1.15.6 The jet range will not be less than 20 Mtrs. & the water droplets in the spray form will be of approx. 250 microns at an angle of 45°.

7.1.16 **HIGH PRESSURE FOG GUNS:**

- 7.1.16.1 At the discharge end of both hose reels, two nos. of high-pressure fog guns, capable of discharging 75 LPM @100 bar & 150 LPM @50 bar in jet or fog patterns will be provided.
- 7.1.16.2 The jet range will not be less than 21 Mtrs. for the gun with output of 150 LPM and should not be less than 16 Mtrs. for the gun with 75 LPM output.
- 7.1.16.3 The water droplets in the spray form will be of approximately 250 microns at an angle of 45 degree.
- 7.1.16.4 The above gun shall be internationally approved and copy of the same shall be furnished along with the offer.
- 7.1.16.5 **Two nos. of above said gun and Two Nos. Hose Pipe (60 Mtrs. Each) shall be supplied as spare.**
- 7.1.16.6 **Pump to Hose reel connection (s)/ pipe along with fittings shall be provided in addition to the connections fitted as spare.**

7.2 **Main Water Pump and Associated Equipment :**

- 7.2.1 The pump shall be single stage & centrifugal type of Godiva Make.

- 7.2.2 The pump should be capable of delivering minimum 3200 LPM at 10 Kg/Cm² (g) at discharges flange. Successful Bidder shall match other parameters of operation w.r.t. Engine of the chassis.
- 7.2.3 Pump shall be CE approved, meet international standards & Comply EN 1028.
- 7.2.4 The water pump with automatic water ring & exhaust ejector type priming device shall be installed.
- 7.2.5 The pump shall be capable of taking suction from:
 - a. Water Tank mounted on chassis. (In normal condition).
 - b. Underground reservoir through flexible suction line with suction lift up to 7.5 M with aid to automatic water ring type primer.
- 7.2.6 The pump shall be rear mounted and shall be accessible and readily removable for repair and maintenance. It shall be driven by the chassis diesel engine through a power take-off unit and propeller shaft.
- 7.2.7 The primer shall be capable of lifting water at least through 7.5M depth (Suction lift) at a rate of not less than 30 cm per second in the suction line. The auto primer should work satisfactory even if it is left dry for long period.
- 7.2.8 The pump discharge shall be able to be routed to :
 - a. 4 Nos. outlets (on rear side of Unit along with control panel) each fitted with ISI marked 63MM, SS instantaneous female coupling fitted with stainless steel end caps by suitable chain link/ suitable flexible steel rope cable.
 - b. The outlets should be angled around 30 deg. towards downward direction.
 - c. Water-cum-Foam Monitor fitted on top of Unit.
- 7.2.9 The pump shall have a suitable box type suction strainer made of Stainless steel. The strainer should easily be removable for maintenance.
- 7.2.10 Pump impeller shaft should be fitted with anti-friction bearing.
- 7.2.11 **Design and Performance Requirements :**
- 7.2.11.1 **Intake Strainer :**
 - a. Intake shall have a removable or accessible strainer inside the connection.
 - b. The strainer(s) shall restrict spherical debris that is too large to pass through the pump.
 - c. Intakes having male threads shall be equipped with caps; intakes having female threads shall be equipped with plugs but remain secured to the MULTI-PURPOSE FIRE TENDER by means of suitable connection.
- 7.2.11.2 **Pump Drains :**
 - a. A readily accessible drain valve(s) that is marked with a label as to its function shall be provided to allow for draining of the pump and all water-carrying lines and accessories.
 - b. The drain valve(s) shall be operational without the operator having to get under the MULTI-PURPOSE FIRE TENDER.
- 7.2.11.3 **Pump Operator's Panel :**
 - a. Each pump control, gauge, and other instrument necessary to operate the pump shall be located on a panel known as the pump operator's panel and shall be marked with a label as to its function.
 - b. All gauges, discharge outlets, pump intakes, and controls shall be illuminated.

7.2.11.4 Instrumentation :

- a. **Pump Operator's Panel:** The following controls and instruments shall be provided and installed as a group at the pump operator's panel:
 - I. A master pump intake pressure indicating device
 - II. A master pump discharge pressure indicating device
 - III. A pumping engine tachometer
 - IV. A pumping engine coolant temperature indicator
 - V. The pumping engine throttle
 - VI. The primer control
 - VII. The water level indicator
- b. Any instrumentation exposed to the elements shall be weatherproof.
- c. Each pressure-indicating device or flow meter, and its respective display, shall be mounted and attached so it is protected from accidental damage and excessive vibration.

7.2.11.5 Required Testing :

- (a) Pump Certification
- (b) Pumping Test
- (c) Pressure Control System Test
- (d) Priming Device Tests
- (e) Vacuum Test
- (f) Water Tank to Pump Flow Test.
- (g) The manufacturer shall conduct a piping hydrostatic test prior to delivery of the MULTI-PURPOSE FIRE TENDER.

7.2.12 SPARES :

7.2.12.1 The following mandatory spares shall be supplied for Main Water Pump by the Successful Bidder:

- I. Pump Shaft with keys & impeller nut- 1 No
- II. Impeller- 1 No.
- III. Shaft sleeve- 2 Nos.
- IV. Set of DE & NDE bearings- 3 Sets
- V. Mechanical seal spares :
 - Rotating & stationary faces with packing -2 Sets
 - Springs pins, gaskets etc- 2 Sets.
- VI. Couplings between PTO Unit & Pump- 2 Nos.

8.0 FOAM PROPORTIONING SYSTEM:

- 8.1 Around the Foam Proportioning system with Foam Induction device duly calibrated for 1%, 3 % & 6 % will be provided near the pump. Also Auxiliary foam induction arrangement to be provided.

9.0 DCP SYSTEM:

- 9.1 A Qty. of **500 Kgs.** DCP will be stored in a vessel.
- 9.2 Placement & location of vessel along with other tanks will be such that load over the chassis is equally distributed & centre of gravity will be as low as possible.
- 9.3 The DCP vessel will be designed & fabricated as per ASME Code VIII Division I, code of unfired pressure vessel.

- 9.4 The material for vessel will be as per ASME codes.
- 9.5 The vessel will be cylindrical in shape.
- 9.6 The max. Corrosion allowance for shell & dish end will be within 2.5mm.
- 9.7 Vessel will be filled with Dry Powder as per Annexure B.
- 9.8 The vessel will be designed for
 - a) Working Pressure-14 Kg/cm²
 - b) Hydro test pressure - 24 Kg/cm².
- 9.9 Vessel will be provided with filling aperture of 18" dia. With flanged cover at top and drain hole of 10" dia. at bottom with flanged cover.
- 9.10 Vessel will be fitted with Safety valve pressure gauge, pressure reducing device.
- 9.11 Isolation valve, charging valve fitted at suitable location.
- 9.12 Vessel will be provided with a blow valve or similar device on top to discharge N₂ gas in the atmosphere without discharging powder.
- 9.13 Safety valve will be installed on the top of vessel at suitable location & the setting of safety valve will be at 16 Kg/cm².
- 9.14 To ensure proper fluidity of the powder appropriate nos. of diffuser nozzle will be provided at the bottom of vessel & suitable arrangement will be made to ensure that diffuser nozzle are not blocked under any circumstances.
- 9.15 The diffuser nozzles should be fitted with synthesized filters. DCP system will have N₂ as an expelling agent.
- 9.16 Each vessel will have suitable Nos. of N₂ cylinders (Min. 68 Ltrs. water capacity) to ensure that 90% powder is discharged.
- 9.17 Equal no. of N₂ Cylinders (**in addition to the fitted for DCP operation**) will be supplied along with Unit as spare.
- 9.18 Suitable arrangement would be provided for flushing powder from the reels etc.
- 9.19 All valves, nozzle, pressure gauge, etc. will be of best quality and material of construction would be of non-corrosion, non-reactive material compatible with DCP.
- 9.20 02 Nos. hose reel with trigger type pistol grip nozzle will be provided at both side of Unit for DCP discharge at easily accessible location so as to facilitate quick pulling with throw of 10 M at 45° & capable of discharging 2.5 Kg/sec.
- 9.21 Free charge of Dry Chemical Powder is in Successful Bidder's scope. Dry Chemical Powder to be provided in sealed drum as per detailed specification of Annexure B.

10.0 WATER CUM FOAM MONITOR:

- 10.1 Foam-cum water monitor with manual override shall be mounted on rooftop of the MULTI-PURPOSE FIRE TENDER having following specification:
 - (a) Make & Model: Suitable Make & Model
 - (b) Foam/ Water monitor should be **UL listed /FM approved**
 - (c) Capacity: Variable flow of 750 to 500 US GPM single Nozzle with Jet, Spray & Fog Pattern.
 - (d) Type: Non-aspirating
 - (e) Discharge Capacity: 750 US GPM at 7.0 KG/CM² (at the base flange of the monitor)
 - (f) Barrel Size: Suitable size as per requirement

- (g) Material of Construction: Entire body along with all components shall be SS-316L.

10.2 PERFORMANCE:

- (a) Water Throw at 7.0 KG/CM² (Monitor inlet pressure): Minimum 60 meter-Horizontal.
 - (b) Foam Throw at 7.0 KG/CM² (Monitor inlet pressure): Minimum 50 meter-Horizontal.
 - (c) Foam expansion :7-8
 - (d) Type of nozzle: Non-aspirating aqua fog/Foam type.
 - (e) Rotation: Vertical:90 deg.(+75 degrees:-15 degrees)
 - (f) Horizontal: 340 deg stop to stop.
- 10.3 Operational control for the monitor shall be provided at the rooftop for horizontal movement, vertical movement & jet/spray pattern of the monitor.
- 10.4 One oil filled pressure gauge shall be provided near the monitor inlets flange.
- 10.5 Separate connection shall be made to operate Foam/Water Monitor directly from pressurized hydrant mains by means of suitably sized inlet line 4 nos., 63MM, ISI marked instantaneous male connectors with strainer fitted on the rear side of the MULTI-PURPOSE FIRE TENDER, shall be connected to the Monitor line with a SS isolation valves.

11.0 WATER TANK:

- 11.1 Net capacity of water tank shall be of **4000 litres**. In addition a 2% expansion space shall be made in the water tank over & above the water capacity. A calibrated dip tape shall be provided on the tank to measure the tank level
- 11.2 The water tank shall be fabricated out of minimum 5MM thick SS-316L plates for the bottom & 4 MM thick SS-316L plates for the sides & top. The tank shall be of welded construction and shall be suitably stiffened with SS-316L angles/flats so as to avoid buckling and distortion.
- 11.3 **The both side of water tank shall be Die Pressed Stiffened type.**
- 11.4 The tank shall have baffles, of minimum 3MM thickness, SS-316L plates, so as to avoid water surging due to movement of Unit. Baffle plates will be connected to the tank with SS nut/bolts. The threads of bolts shall be TAC welded beyond the nut to prevent the nuts falling in the tank due to vibrations.
- 11.5 Tank shall be provided with anti-vortex device at the nozzle for pump suction.
- 11.6 An inspection manhole of 500MM size shall be provided on top with a hinged and bolt able cover with suitable gasket. The manhole shall be fitted with SS nameplate having etched marking WATERØ (letter size 100MM).
- 11.7 Suitable lifting lugs shall be provided on the tank shell to enable it to be lifted off the Unit for repairs/replacement as necessary.
- 11.8 The tank shall be fitted with a sludge trap. The bottom of the tank shall have a slight slope towards the sludge trap.
- 11.9 The tank shall also have a cleaning hole of 250MM dia. Manhole shall be fitted with 50MM drain pipe with AUDCO make SS ball valve and 63MM (SS) ISI marked instantaneous male coupling incorporated in it.
- 11.10 The tank shall be fitted with overflow pipes of suitable diameter and the discharge end shall be taken below the chassis without reducing the effective ground clearance. The overflow pipe shall be routed to outside water tank.

- 11.11 The tank shall be filled by means of suitably sized inlet line from pressurized hydrant mains. 4 nos. 63MM ISI marked, SS instantaneous male connectors (2 on each side of the MULTI-PURPOSE FIRE TENDER) shall be connected to the filling line. The inlet lines will be provided from AUDCO Make SS ball valve. Water filling arrangement to the tank shall be provided from upper side of the tank only and the filling line shall be routed to outside water tank.
- 11.12 The tank shall have an adequately sized breather valve. The inlet line in the tank shall have an adequately strong deflector plate, which will avoid the incoming jet of water from hitting the tank sides/bottom.
- 11.13 All nozzles for the tank shall have suitable reinforcement pads. Nozzles shall also have adequate stiffeners to take the loads from piping.
- 11.14 Tank supporting structure on the chassis shall be of SS-316L.
- 11.15 Reinforcement pads at tank supporting structure shall be of same thickness and material as that of the water tank.
- 11.16 Suitable strainer (SS) shall be provided at the tank bottom on pump suction line.
- 11.17 Provision shall be made on either side of the body for visual inspection/maintenance of the water tank.
- 11.18 **Connection to be provided for Pump to Water tank filling.**
- 11.19 Tank Construction & Mounting :
 - 11.19.1.1 All water tanks shall be constructed of noncorrosive material or other materials that are protected against corrosion and deterioration.
 - 11.19.1.2 The water tanks shall have a means to permit cleaning of the tank.
 - 11.19.1.3 Water tank should be independent of the body and compartments, it shall be equipped with a method for lifting the tank(s) off of the chassis.
 - 11.19.1.4 Tank shall be cradled, cushioned, spring-mounted, or otherwise protected from undue stress resulting from travel on uneven terrain.
 - 11.19.1.5 Water tank shall be provided with baffles to form a containment or dynamic method of water movement control.
 - 11.19.1.6 Containment method of baffling should be used, a minimum of two transverse or longitudinal vertical baffles shall be provided.
 - 11.19.1.7 There shall be a maximum distance of 48 in. (1220 mm) between any combination of tank vertical walls and baffles.
 - 11.19.1.8 Each baffle shall cover at least 75 percent of the area of the plane that contains the baffle.
 - 11.19.1.9 The water tank will be mounted on the Unit on a sub frame using Rubber Metacones. This sub frame will be made from Anti-Corrosive Treated MS 40 section and will be bolted with the chassis using the high tensile bolts. 'U' Bolts shall not be used for mounting of tanks on Unit. The rubber metacones shall facilitate to absorb the jerks and bending torsions in expansion as well as compression mode without high deflection. The manufacturer shall provide complete design data of metacones and sub frame including the load calculations and metacone quantity sufficiency. Tank will be mounted on the chassis in a manner keeping in view the proper load distribution on the axles. The baffles will be arranged in a manner to facilitate easy cleaning of the tanks. The tank will be mounted on two / three cross bearers to counteract

stresses caused by chassis flexing. The Centre of Gravity shall be maintained as low as possible.

11.19.1.10 Cleanout Sumps :

- One cleanout sumps shall be provided.
- A 3 in. (75 mm) or larger removable pipe plug shall be furnished in each sump.

11.20 **Water Level Indicator :**

11.20.1.1 An indicator shall be provided that shows the level or amount of water in the tank(s).

11.20.1.2 A mechanical (**magnetic type**) level gauge also to be provided.

11.20.1.3 A suitably protected water level indicator of the graduated glass tube, clear acrylic shall be provided close to the control panel. Isolation valve shall be provided just after the tap off point near the water tank for the level indicator.

11.20.1.4 Electronic LED Water Level Indicators indicating the tank levels as EMPTY, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ and FULL shall be provided on the pump control panel. These levels shall be indicated by number of glowing LED lights (no LED Lights means an empty tank, All LED Lights means full tank). The indicators shall sense the fluid level in the tank with help of a pressure sensing probe. The indicators shall be located on the rear pump control panel in such a manner that the Operator / Firemen can easily view the tank levels while being away from the Unit. **Additional Level Indicator – Two Nos. shall be provided as spare.**

11.21 **Tank-to-Pump Intake Line :**

11.21.1.1 The water tank shall be connected to the intake side of the pump with a valve controlled at the pump operator's position.

11.21.1.2 Filling and Venting :

- a. Fill Opening: - A convenient covered fill opening designed to prevent spillage shall be provided.
- b. Vent/Overflow Outlet: - A vent/overflow outlet that is sized to allow water to be drawn from the tank.
- c. External Fill: - An external fill connection leading directly to the tank shall be provided.
- d. The external fill connection shall be provided with a removable or accessible strainer, a shutoff valve capable of being throttled, a minimum 30-degree sweep elbow positioned downward, and a closure cap or plug.

11.22 **Water Tank Capacity Certification :**

- a. The manufacturer shall certify the capacity of the water tank prior to delivery of the MULTI-PURPOSE FIRE TENDER.
- b. The certified capacity shall be recorded on the manufacturer's record of construction and the certification shall be provided to the OIL when the MULTI-PURPOSE FIRE TENDER is delivered.

11.23 **PIPING:**

- 11.23.1.1 All piping shall be designed to have minimum pressure drop and achieve the required pressure and flow at various locations.
- 11.23.1.2 All piping shall be seamless and designed for 10% over the maximum pressures encountered in the pipe.
- 11.23.1.3 The piping shall be flanged for ease of maintenance. However, joints to be kept minimum.
- 11.23.1.4 Valves of less than 1.5 inch size shall be forged construction and valve more than 2ö size or more size shall be of cast construction.
- 11.23.1.5 All lines shall be suitably supported so as to provide rigidity and avoid vibrations.
- 11.23.1.6 All lines less than 1.5ö NB size can be socket welded to matching 3000 LBS rating fittings. All lines above 2ö NB size shall be butts welded with full penetration welds.

11.24 ACCESSORIES :

11.24.1 CONTROL PANEL :

Adequately illuminated pump operating panel shall be provided at the rear side of the Unit and these shall include the following areas:

- a. Auxiliary throttle control for the engine.
 - b. Independent pressure gauges calibrated to 25 KG/CM² for pump discharge.
 - c. Threaded suction inlet of water pump with blind cap.
 - d. Quick opening valve for lining up water tank to pump.
 - e. Level gauge for water tank & Foam Tank.
 - f. Priming valve for water pump.
 - g. System schematic etched on Stainless Steel plate.
 - h. Operating instruction plate and flushing out instruction plate (both on boldly etched Stainless steel plates).
 - i. Compound pressure gauges.
 - j. RPM for pumps.
- 11.24.2 In addition to the items mentioned above, Successful Bidder shall provide any other items that he may find essential. Any of these items which are also required in the driver's cabin shall be provided at suitable locations in the driver's cabin. Each lever, switch, valve, gauges, outlet/inlet etc. shall have identification made on metal plate and duly riveted. The microphone of the PA system shall be fixed inside the driver cabin on a flexible stand at a suitable location.

12.0 FOAM CONCENTRATE TANK :

- 12.1.1 The foam compound tank of **1000 liters** net capacity shall be fabricated out of 5MM thick SS-316L plates for the bottom & 4 MM thick SS-316L for the sides & top. In addition 2% of expansion space shall be made in the tank, over and above foam compound capacity.
- 12.1.2 **The both side of water tank shall be Die Pressed Stiffened type.**
- 12.1.3 The foam tank shall be of welded construction and shall be suitably stiffened with SS 316L angles/flats so as to avoid buckling and distortion.
- 12.1.4 Weld joints shall be minimized
- 12.1.5 Suitable lifting lugs shall be provided on the tank shell to enable it to be lifted off the Unit for repairs/replacement as necessary.

- 12.1.6 The tank shall be fitted with a sludge trap of 150 mm. The bottom of the tank shall have a slight slope towards the sludge trap.
- 12.1.7 The tank shall also have a cleaning hole and drain pipe with AUDCO make S.S. ball valve and 63MM (SS) instantaneous male coupling incorporated in it.
- 12.1.8 The tank shall have a filling hole of 150MM diameter at top and with a removable conical strainer of SS-316L. The filling manhole shall have a screwed cap. The filler cap shall have an etched SS name plates with marking -FOAM. A calibrated dip tape shall be provided on the tank to measure the tank level.
- 12.1.9 Breather valve shall be provided for automatic venting of the foam compound tank when the foam compound is drawn from it or when the tank is being filled.
- 12.1.10 The inlet line in the tank shall have an adequately strong deflector plate, which will avoid the incoming jet of foam from hitting the tank side/roof.
- 12.1.11 All nozzles for the tank shall have suitable reinforcement pads. Nozzles shall also have adequate stiffeners to take the loads from piping. Tank shall be provided with anti vortex device at nozzle for pump suction.
- 12.1.12 Tank supporting structure on the chassis shall be of SS 316L.
- 12.1.13 Reinforcement pads at tank supporting structure shall be of same thickness and material as that of the foam tank
- 12.1.14 Provision shall be made on either side of the body for visual inspection/maintenance of the foam tank.
- 12.1.15 A calibrated dip tape shall be provided on the tank to measure the tank level.
- 12.1.16 The foam concentrate tank shall be provided with a fill tower.
- 12.1.17 The fill tower opening shall be protected by a completely sealed airtight cover.
- 12.1.18 The cover shall be attached to the fill tower by mechanical means.
- 12.1.19 The fill opening shall incorporate a removable screen with a mesh not to exceed ¼ in. (6 mm).
- 12.1.20 The fill tower shall be equipped with a pressure/vacuum vent that enables the tank to compensate for changes in pressure or vacuum when filling or withdrawing foam concentrate from the tank.
- 12.1.21 The pressure/vacuum vent shall not allow atmospheric air to enter the foam tank except during operation or to compensate for thermal fluctuations.
- 12.1.22 The vent shall be protected to prevent foam concentrate from escaping or directly contacting the vent at any time.
- 12.1.23 The vent shall be of sufficient size to prevent tank damage during filling or foam withdrawal.
- 12.1.24 The foam concentrate tank shall not be equipped with an overflow pipe or any direct opening to the atmosphere.
- 12.1.25 The foam concentrate tank(s) shall be designed and constructed to facilitate complete interior flushing and cleaning as required.
- 12.1.26 Level Indicator for foam tank shall be provided as mentioned for Water Tank.
- 12.1.27 **Tank Drain :**
 - 12.1.27.1 A minimum 1 in. (25 mm) inside diameter full flow drain valve and piping shall be provided at the lowest point of any foam concentrate tank.

- 12.1.27.2 The drain shall be piped to drain directly to the surface beneath the Tender without contacting other body or chassis components.
- 12.1.28 The foam concentrate tank shall be constructed and installed to be independent of the tender body.
- 12.1.29 The foam concentrate discharge system design shall prevent the siphoning of foam concentrate.
- 12.1.30 A label that reads "Foam Tank Fill" shall be placed at or near any foam concentrate tank fill opening.
- 12.1.31 The foam concentrate tank outlet connection shall be designed and located to prevent aeration of the foam concentrate and shall allow withdrawal of 80 percent of the foam concentrate tank storage capacity under all operating conditions with the Tender on level ground.
- 12.1.32 The foam concentrate tank inlet connection, if provided, shall prevent aeration of the foam concentrate under all operating conditions.
- 12.1.33 The foam tank will be mounted on the Unit on a sub frame using Rubber Metacones. This sub frame will be made from Anti-Corrosive Treated MS 40 section and will be bolted with the chassis using the high tensile bolts. 'U' Bolts shall not be used for mounting of tanks on Unit. The rubber metacones shall facilitate to absorb the jerks and bending torsions in expansion as well as compression mode without high deflection. The manufacturer shall provide complete design data of metacones and sub frame including the load calculations and metacone quantity sufficiency. Tank will be mounted on the chassis in a manner keeping in view the proper load distribution on the axles. The baffles will be arranged in a manner to facilitate easy cleaning of the tanks. The tank will be mounted on two / three cross bearers to counteract stresses caused by chassis flexing. The Centre of Gravity shall be maintained as low as possible.
- 12.1.34 A manual rotary transfer pump shall be provided for transferring foam compound from drums to the foam compound tank without causing any frothing in the tank. Arrangement shall be provided to connect this pump through a tube to the tank filling line.

13.0 PERFORMANCE GUARANTEE :

- 13.1.1 The manufacturer shall guarantee the design, material, workmanship and the performance of the unit for a period of 18 months from the date of the supply of completed Unit. The Successful Bidder, at M/s Oil India Ltd. premises, shall rectify any mechanical defect, faulty workmanship or operational defects found during this period within reasonable time without any extra cost.

14.0 TRAINING :

- 14.1.1 After supply of the Unit, the Successful Bidder shall provide two days training on operation & maintenance of fire Unit including chassis at M/s Oil India Ltd. site and charges for the same shall be included in the price.

Abbreviation:

Unit - Complete Foam Nurser

MVA - Motor Vehicle Act
RPM - Revolutions per Minute
LED - Light-Emitting Diode
PSV - Pressure Safety Valve

Annexure – A

See Clause 2.13 for GVW

S. No.	Item	Numbers
1.	Water tank of capacity 4000 Litres capacity (Wt. Approx. 5000 Kg)	01
2.	Foam Tank of capacity 1000 Litres capacity (Wt. Approx. 1500 Kg)	01
3.	Dry Chemical Powder Vassal 500 Kg Capacity (Wt. Approx. 1200 Kg)	01
4.	Chassis (Wt. Approx. 4300 Kg)	01
5.	Pumps, PTO & Propeller Shaft (Wt. Approx. 1000 Kg)	01
6.	Fabrication & Piping (Wt. Approx. 1200 Kg)	01
7.	Weight of crew members (weight 420 Kg)	06
8.	Delivery hoses (type ó B) with GM coupling (22.5 M length)	15
9.	Suction Hose	4
10.	SCBA Sets	2
11.	Foam Branches (FB ó 10X)	4
12.	Triple purpose branch	4
13.	Standard branch	4
14.	Male to Male coupling	2
15.	Female to female coupling	2
16.	Fire suits	2
17.	Roof top ladder (10.5 M, Aluminum)	1
18.	Portable monitor	1
19.	Akron Branch	4
20.	Ceiling Hook	1
21.	Dividing Breachings	2

22.	Collecting breaching	2
23.	Collecting head	1
24.	MFG	2
25.	Safety Helmets	10
26.	Gum boots	10
27.	Manila rope (1ö diameter, 50M length)	1
28.	Suction wrenches	2
29.	Strainer	1

Annexure -B

Dry Chemical Powder Potassium Urea Based

1. General: The Powder shall be Potassium Allophonate / Carbonate based dry chemical powder, a reaction product of Potassium Bicarbonate ó Urea suitable for large scale high intensity flammable oil & gas fire. The product should be UL Approved.

2. Physical & Chemical Parameters:

- a. Appearance : Off-White free flowing powder
- b. Particle Size : 50 ó 70 microns
- c. Apparent density : 0.5 - 0.7 gm/cc
- d. Water Repellency : 1.5% Max
- e. Moisture content : less than 0.25%(m/m)
- f. Temperature stability : ± 60°C

3. Performance Test: Shall able to extinguish a 20B / 144B Hydrocarbon tray fire by filling 3.5 kg (max) Powder in 5 kg extinguisher.

4. Physiological Effect:

- a. The DCP shall not have harmful ingredients
- b. It should be environmental friendly & nontoxic to humans and animals.
- c. Should submit certificates of 1) Non-Toxicity 2) Non-Skin Irritation Test

5. Compatibility:

The DCP shall be compatible with all type of firefighting foams.

6. Approvals:

The Dry Chemical Powder (DCP) should be Listed/Approved by UL as per UL-299C on fire extinguishing Dry Chemical for special application.

The dry powder should follow the latest Oil Industries Safety Directorate norms (OISD-116), as mentioned in Section 12, Page No. 24.

7. Packing:

The DCP shall be packed in 25kg good quality HDPE drums which should be hermetically sealed.

8. Shelf Life:

DCP shall have minimum shelf life of 05 years without any degrading of chemical & physical properties.

9. Documents:

- a. Must submit valid UL: 229C Certificate along with offer and supply.
- b. Thermal Gravimetric Analysis (TGA) with decomposition between 215°C and 260°C should be submitted of a reputed Lab along with the supply, IR analysis report as conducted by UL to be also to be submitted along with the supply.
- c. The bidder should submit ISO 9001:2008, ISO 14001: 2004 & OHSAS 18001:2007 certificate copies along with supply.
- d. Warrantee / guarantee Certificate for the DCP along with supply.
- e. MSDS of the material along with supply.
- f. Original manufacturer test report along with supply.
- g. Disposal Procedure for the material along with supply.
- h. If the powder is imported the latest Bill of Lading is to be produced along with supply.
- i. OIL reserves the right to send the sample from the supplied powder for further testing to any authorized national laboratory in India.

10. MARKING:

Each container/drum containing Dry Chemical Powder shall be labelled with the following information:

- (a) Manufacturer's name or trade mark.
- (b) Quantity of the Powder, in Kg (Net and Gross weight)
- (c) Type of the Powder and Foam Compatible.
- (d) Date of manufacture/Batch No.
- (e) UL Marking.

STANDARD NOTES:

- 1.0 Materials to be supplied hereunder shall be new, unused, of recent make, of best quality & workmanship and shall be guaranteed by the seller against defects arising from faulty materials, workmanship or design. Defective goods / materials or parts notified by OIL to the seller shall be replaced immediately by the supplier at the supplier's expense at no extra cost to OIL.
- 2.0 The third party inspection is to be carried out by an internationally reputed inspection Agency. Bidders must indicate the availability of such a third party inspection agency in their area.
- OIL'S APPROVED THIRD PARTY INSPECTION AGENCIES ARE M/S. LLOYDS, M/S. BUREAU VARITAS, M/S. TUBOSCOPE, M/S. RITES, M/S. I.R.S AND M/S. DNV.
- All inclusive charges for Third Party Inspection to be indicated.
- 3.0 Bidders are to quote for total cost of multi- purpose fire tender including cost of Chassis, Fabrication along with all equipments & accessories, commissioning charges, training charges, Taxes & Duties as applicable, Transportation charges upto Oil India Limited's Gas Processing Plant, DND-GPC at Dandewala near Tanot in Jaisalmer district (155 KMs approx. Distance from Jaisalmer Township) of Rajasthan, Insurance Charges, Entry Tax, Payment Terms, **Best Delivery Period**, etc. in their offer.
- 4.0 For order with F.O.R. Destination term, 100% payment against dispatch document will not be entertained. In this regards please refer payment terms in ANNEXURE - MM/LOCAL/E-01/2005. Bidders are advised to take note of this while mentioning payment term.
- 5.0 The prices offered will have to be firm through delivery and not subject to variation on any account. A bid submitted with an adjustable price will be treated as non-responsive and rejected.
- 6.0 Other terms and conditions of the enquiry shall be as per General Terms and Conditions for Global E-Tender vide MM/LOCAL/E-01/2005. However, if any of the Clauses of this tender document contradict the Clauses of the booklet MM/LOCAL/E-01/2005 elsewhere, those in this tender document shall prevail.

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BID EVALUATION CRITERIA (BEC)

The following BEC will govern the evaluation of the bids received against this tender. Bids that do not comply with stipulated BEC in full will be treated as non responsive and such bids shall prima-facie be rejected. Bid evaluation will be done only for those bids that pass through the "Bid Evaluation Criteria" as stipulated in this document.

Other terms and conditions of the enquiry shall be as per General Terms and Conditions vide MM/LOCAL/E-01/2005 for E-Procurement (LCB Tenders). However, if any of the Clauses of the Bid Evaluation Criteria (BEC) contradict the Clauses of the tender or MM/LOCAL/E-01/2005 elsewhere, those in the BEC shall prevail.

<u>Criteria</u>	Complied / Not Complied. (Remarks if any)
<p><u>BID EVALUATION CRITERIA</u></p> <p><u>A-TECHNICAL</u></p> <p>Bid should be complete in all aspect covering the entire scope of supply and should conform to the technical specifications indicated in the bid documents duly supported with technical catalogues/ literatures. Incomplete and non-conforming bids will be rejected outright.</p> <p><u>1.0 BIDDER'S QUALIFICATION</u></p> <p>The bidder shall be a "Fabricator / Assembler" of "Fire Water Tender/ Foam Tender/DCP Tender /Foam Nurser or Multi-purpose Fire Tender (i.e. combination of Water, Foam & DCP Tender).</p> <p>Copy of "Certificate of Incorporation" / "NSIC" certificate of the firm shall be furnished along with the bid.</p> <p><u>2.0 BIDDER'S EXPERIENCE</u></p> <p>2.1 The bidder should have the experience of supply of at least 01 (one) no. of "Fire Water Tender/ Foam Tender/DCP Tender or Multi-purpose Fire Tender (i.e. combination of Water, Foam & DCP Tender) on minimum 16 Ton Chassis capacity in the last 05 (five) years preceding to the Bid Closing date of this Tender.</p> <p>Copy of Purchase Order and Commissioning report /Performance report/ Proof of Supply should be enclosed along with bid to ascertain the same.</p>	

2.2 Fabricator shall have all manufacturing / fabrication and testing facility with adequate testing /quality assurance facility as per applicable codes.

A List of the manufacturing / fabrication and testing facility shall be submitted along with the offer.

2.3 The bid/ offer shall be for complete unit i.e. chassis along with fabrication & commissioning of Multi-Purpose Fire Tender.

B) FINANCIAL CRITERIA :

1.0 The bidder shall have an annual financial turnover of minimum INR 39.91 Lakh during any of the preceding 03 (three) financial years reckoned from the original bid closing date.

1.1 In case of Consortium, at least one member of the consortium shall have an annual financial turnover as mentioned in para 1.0 above and the other members of the consortium should meet minimum turnover of INR 19.95 lakhs during any of the preceding 03(three) financial years reckoned from the original bid closing date.

2.0 "Net Worth" of the bidder should be positive for the preceding financial/ accounting year.

3.0 Documentary evidence in the form of Audited Balance Sheet and Profit & Loss Account for the preceding 03(three) financial/accounting years should be submitted along with the technical bid.

Considering the time required for preparation of Financial Statements, if the last date of preceding financial / accounting year falls within the preceding six months reckoned from the original bid closing date and the Financial Statements of the preceding financial / accounting year are not available with the bidder, then the financial turnover of the previous three financial / accounting years excluding the preceding financial / accounting year will be considered. In such cases, the Net worth of the previous financial / accounting year excluding the preceding financial / accounting year will be considered. However, the bidder has to submit an affidavit/undertaking certifying that the balance sheet/Financial Statements for the financial year í í í (as the case may be) has actually not been audited so far.

Notes:

a) For proof of Annual Turnover & Net worth any one of the following document must be submitted along with the bid:-

i) A certificate issued by a practicing Chartered/Cost Accountant (with Membership Number and Firm Registration Number), certifying the Annual turnover & Net worth as per format prescribed in ANNEXURE-A.

OR

ii) Audited Balance Sheet along with Profit & Loss account.

b) In case the bidder is a Central Govt. Organization/PSU/State Govt. Organization/Semi-State Govt. Organization or any other Central/State Govt.

Undertaking, where the auditor is appointed only after the approval of Comptroller and Auditor General of India and the Central Government, their certificates may be accepted even though FRN is not available. However, bidder to provide documentary evidence for the same.

C) COMMERCIAL CRITERIA:

- i). Bids are invited under "Single Stage Two Bid System". Bidders have to submit both the "Techno-commercial Unpriced Bids" and "Priced Bids" through electronic form in the OIL's e-Tender portal within the bid Closing date and time stipulated in the e-tender. The Techno-commercial Unpriced bid is to be submitted as per scope of works and Technical specification of the tender and the priced bid as per the online Commercial bid format. Any offer not complying with the above shall be rejected straightway.
- ii). In Technical Bid opening, only the "Technical RFX Response" tab will be opened. Therefore, the bidder should ensure that Technical Bid is uploaded in the Technical RFX Response- >User->Technical Bid only. No price should be given in above "Technical RFX Response" tab, otherwise the offer will be rejected. Please go through the help document provided in OIL's e-Portal, in details before uploading the documents.
- iii). Bid security:
The bid must be accompanied by Bid Security of **INR 1,60,000.00** in OIL's prescribed format as Bank Guarantee or a Bank Draft/Cashier cheque in favour of OIL. The Bid Security shall be submitted manually in sealed envelope superscribed with Tender no. and Bid Closing date to Chief Manager (M & C), Oil India Limited, Rajasthan Project, 2A District Shopping Centre , Saraswati Nagar , Basni Jodhpur-342005, Rajasthan, India on or before the Bid Closing Date and Time mentioned in the Tender. If bid security in ORIGINAL of above mentioned amount is not received within bid closing date and time , the bid submitted through electronic form will be rejected without any further consideration. The Bank Guarantee towards Bid Security shall be valid up to 31.07.2017.

The bidders who are exempted from submitting the Bid Security should attach documentary evidence along with their offer as per General Terms and conditions Local Tender (MM/LOCAL/E-01/2005).
- iv). Performance Security:
The successful Bidder will have to submit Performance Security @ 10% of total Order Value after receipt of order. The Performance Security shall be valid for 18 months from the date of supply of completed unit.

<p>Bidder must confirm the same in their bid. Offers not complying with this clause will be rejected.</p> <p>v). <i>The Bank Guarantee should be allowed to be encashed at all branches within India.</i></p> <p>vi). Validity of the bid shall be minimum 120 days from the Bid Closing Date.</p> <p>vii). The prices offered will have to be firm through delivery and not subject to variation on any account. A bid submitted with an adjustable price will be treated as non-responsive and rejected.</p> <p>viii). Bids received in physical form, but not uploaded in OIL&S e-Tender Portal will be rejected.</p> <p>ix). The Bid documents are not transferable. Offers made by bidders who have not been issued the bid document by the Company will be rejected.</p> <p>x). Any Bid containing a false statement shall be rejected.</p> <p>xi). Bids received by Company after the bid closing date and time will be rejected.</p> <p>xii). All the Bids must be Digitally Signed using "Class 3" digital certificate with Organisation's name (<i>e-commerce application</i>) as per Indian IT Act obtained from the licensed Certifying Authorities operating under the Root Certifying Authority of India (RCAI), Controller of Certifying Authorities (CCA) of India. The bid signed using other than "Class 3 with Organisation's Name" digital certificate, will be rejected.</p> <p>xiii). Technical RFx Response folder is meant for Technical bid only. Therefore, No price should be given in Technical RFx Response folder, otherwise the offer will be rejected.</p> <p>xiv). Price should be maintained in the "online price schedule" only. The price submitted other than the "online price schedule" shall not be considered.</p> <p>Bidders must confirm that Goods, materials or plant(s) to be supplied shall be new of recent make and of the best quality and workmanship and shall be guaranteed for a minimum period of 1(one) year from the date of successful commissioning at site against any defects arising from faulty materials, workmanship or design. Defective</p>	
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<p>goods/materials or parts rejected by OIL shall be replaced immediately by the supplier at the supplier's expenses and no extra cost to OIL.</p> <p>xvi). Integrity Pact :</p> <p>OIL shall be entering into an Integrity Pact with the bidders as per format enclosed vide Annexure XII of the tender document. This Integrity Pact proforma has been duly signed digitally by OIL's competent signatory. The proforma has to be returned by the bidder (<u>along with the technical bid</u>) duly signed (digitally) by the same signatory who signed the bid, i.e., who is duly authorized to sign the bid. Any bid not accompanied by Integrity Pact Proforma duly signed (digitally) by the bidder shall be rejected straightway. Uploading the Integrity Pact with digital signature will be construed that all pages of the Integrity Pact has been signed by the bidder's authorized signatory who sign the Bid.</p> <p><u>D. COMMERCIAL BID EVALUATION</u></p> <p>1.0 The bids conforming to the terms and conditions stipulated in the tender and considered to be responsive after subjecting to the Bid Evaluation Criteria as well as verification of original of any or all documents/ documentary evidences pertaining to BEC, will be considered for further evaluation as per the Bid Evaluation Criteria.</p> <p>2.0 Priced bids of only those bidders will be opened whose offers are found technically acceptable. The technically acceptable bidders will be informed before opening of the "priced bid".</p> <p>3.0 For evaluation of bids, total cost of multi- purpose fire tender including cost of Chassis, Fabrication alongwith all equipments & accessories, commissioning charges & training charges as per tender requirements will be considered. Bidders are advised to quote for all items separately. All the items will be procured from the same source.</p> <p>4.0 Comparison of offers will be done on Total F.O.R Oil India Limited's Gas Processing Plant, (DND-GPC) at Dandewala near Tanot in Jaisalmer district (155 KMs approx. Distance from Jaisalmer Township) of Rajasthan basis as under:</p> <p>(A) Total Material Cost (Cost of Chassis, Fabrication, Equipment, Accessories complete is all aspect as per technical specification of multipurpose fire tender)</p> <p>(B) Third Party Inspection & Testing Charges including service tax ,if any</p> <p>(C) Packing and Forwarding Charges, if any</p> <p>(D) Total Ex-works value, (A + B+C) above</p> <p>(E) Excise Duty as applicable on (D) above</p> <p>(F) Sales Tax as applicable on (D + E) above</p> <p>(G) Total FOR Manufacturing station Value, (D + E +F) above</p>	
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<p>(H) Transportation charges to destination (OIL& DND-GPC)</p> <p>(I) Insurance charges @ 0.5% of total FOR Mfg. Station Value (G) above</p> <p>(J) Rajasthan Entry Tax</p> <p>(K) Total FOR Destination (OIL& DND-GPC) value (G + H + I+J) above</p> <p>(L) Commissioning & Training Charges including service tax if any</p> <p>(M) Grand Total value (K + L)</p> <p>Note: To evaluate the inter-se-ranking of the offers, Rajasthan Entry Tax on purchase value (i.e under öJö above) will be loaded as per prevailing Govt. of Rajasthan guidelines as applicable on bid closing date. Bidders may check this with the appropriate authority while submitting their offer.</p> <p>However, payment of applicable Rajasthan Entry Tax on purchase value shall be to OIL& Account.</p> <p>5.0 To ascertain the substantial responsiveness of the bid OIL reserves the right to ask the bidder for clarification in respect of clauses covered under BEC also and such clarifications fulfilling the BRC clauses in toto must be received on or before the deadline given by the company, failing which the offer will be summarily rejected.</p> <p>3. GENERAL:</p> <p>The Compliance statement must be filled up by bidders and to be submitted/uploaded along with their bids. In case bidder takes exception to any clause of the bidding document not covered under BEC then the Company has the discretion to load or reject the offer on account of such exception if the bidder does not withdraw/modify the deviation when/as advised by Company. The loading so done by the company will be final and binding on the bidders.</p> <p>If any of the clauses in the BEC contradicts with other clauses of bidding document elsewhere, then the clauses in the BEC shall prevail.</p>	
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NOTE:

Bidders should submit their bids (preferably in tabular form) explicitly mentioning compliance / non compliance to all the NIT terms and conditions of NIT.

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