ASSAM GAS COMPANY LTD
P.O. Duliajan Dist : Dibrugarh
Assam 786 602

No. PU/F&S/MFT/2014/50 **Date: 07/11/2014**

NOTICE INVITING TENDER

FOR FABRICATION AND SUPPLY OF ONE NUMBER BRAND NEW MULTIPURPOSE FIRE TENDER

1.0 INTENT

1.1 AGCL invites sealed tenders from reputed leading manufacturers, (herein after known as bidder / supplier) of all types of Fire Tenders with various combinations / capacity such as Water/Foam/DCP/CO2/Hall on etc to cater to specific requirements of customers for supply of One number Brand New Multipurpose Fire Tender. The bidder must design, manufacturer and to be tested the proposed Brand New Multipurpose Fire Tender as per IS Standard and Customer's requirement. The bidder must have in house testing facility for all types of testing as per IS and Defense requirement.

1.2 Sealed TENDER with 180 days validity from the scheduled date of bid opening under the single stage two bid system must be submitted on or before **2:00 pm (IST) of 12/12/2014** and Technical Bids likely to be opened at 2:30 PM. (IST) on the same day. The sealed Priced Bids shall be opened only for short listed tenderers on a later date after evaluation of Technical Bids. **Earnest Money (EMD) of Rs 1.00 Lakh (Rupees One Lakh) only** in the form of Demand Draft or Bank Guarantee in any Nationalised Bank and schedule bank in favour of Assam Gas Company Ltd. payable at Duliajan, Assam, India, 786 602 must be enclosed with the Technical Bid which will be retained by the company for successful tenderers till formal completion and acceptance of the supply.

1.3 Sealed Tenders super scribing the Tender No and date may be addressed to: The Managing Director, Assam Gas Company Ltd., P.O. Duliajan, Dist : Dibrugarh, Assam 786 602 by Speed or Registered Post/ Reputed Courier service only so as to reach latest by **2:00 pm on 12/12/2014.** The company shall not be held responsible for non receipt of the same or postal delays / transit loss, etc. Any offer received after the appointed time on the bid closing date shall be summarily rejected.

1.4 In case the bid closing date happens to be a bandh/holiday, the same will be deferred to the same time of the next full working day(except Saturday/ Sunday).

2.0 Details of Bid Document:

1	Bid Document Number & Date	**PU/F&S/MFT/2014/49** dated :07/11/2014
2	Bid Due Date (Techno – Commercial & Price Bid)	1400 hours on 12/12/2014
3	Bid Submission at	Assam Gas Company Ltd Duliajan-786602 (Assam)

4.	Opening of Technical -Commercial Bids	1430 hours on 1**2/12/2014**
5.	Earnest Money Deposit	Rs 1,00,000.00
6	Bid Validity	180 days from the scheduled date of opening of bid
7	Delivery Period	6 (Six) months

3.0 BID SUBMISSION :

3.1 BIDS IN TWO (2) PARTS IN SEPARATE SEALED COVERED ENVELOPES INDICATING THE NAME OF THE WORK AND TENDER NO WRITTEN IN BOLD AND LEGIBLY WRITING

PART-A : **TECHNO – COMMERCIAL BID**

a) EMD amounting to Rs 1,00,000.00 by D/D or (Bank Guarantee) in a separate sealed envelope

b) Technical Submission containing all relevant documentation as per Qualification criteria (Minimum Bid Evaluation Criteria)

c) Certification in regard to Technical Compliance & Past Performance, Technical Catalogues and User's Manual for offered product.

d) Commercial Terms

e) Warranty and Post Warranty Support Terms

f) Technical Bid Compliance Statement as per format

- Technical Specifications
- Test certificates of quoted product

g) Commercial Bid Compliance Statement

h) Un Priced Price Bids but with other information filled in

PART-B : **PRICE BID**

Priced offer in prescribed format to be submitted in a separate envelope.

The price bids shall be opened only for technically qualified bidders

3.2 The EMD amount in the form of a Demand Draft to be drawn in favour of Assam Gas Company payable at Duliajan or Bank Guarantee should be included in the Sealed Technical Offer part. These two covers shall be put into one outer cover and sealed. All the covers should duly bear the tender number and date of closing along with the name and address of the bidder.

4.0 TENDER PREPARATION:

4.1 A statement that Bidder agrees to be bound by all contract terms and conditions stated in this Tender and as may be revised by Addendum issued before the closing date.

4.2 Pricing Information shall NOT be included in this part of the Tender. Bidders shall ensure that no pricing information of any type is shown in their technical Tender. The inclusion of pricing in any place other than the sealed Pricing Tender will result in rejection of the Tender.

4.3 All pages of the Tender document must be numbered and signed by the authorized signatory.

4.4 The prices quoted shall be firm and must include all charges. Taxes, etc shall be shown separately.

4.5 The prices and amounts entered in the schedule of prices shall represent the Bidder's offer in accordance with the requirement.

4.6 At any time prior to the deadline for submission of tenders, Assam Gas Company Ltd. for any reason, whether at its own initiative or in response to a clarification required by a prospective bidder, may modify the tender documents by issuance of amendments. Such amendments shall be part of the tender documents pursuant to relevant Clause and will be notified in AGCL Website assamgas.org. The same will be binding on all tenders. Managing Director Assam Gas Company Ltd. may, at his discretion, may extend the deadline for the submission of the tenders if required.

5.0 CONDITIONS OF CONTRACT:

5.1 Contractual Obligation : All bidder who submit a Tender in response to this tender shall understand, acknowledge and agree that the AGCL is not obligated thereby to enter into an agreement or contract with any Bidder and, further, has absolutely no financial obligation to any Bidder.

5.2 Contract Acceptance: A Tender submitted in response to this notice shall be considered a binding offer. Acknowledgement of this condition shall be indicated by signature of an officer of the Tenderer legally authorized to execute contractual obligations and shall be conveyed by submitting a signed Form of Tender as per the enclosed format.

5.3 All prices and any other significant factors contained in the Tender shall be valid for acceptance for a period of 180 calendar days from the Tender opening date. Notwithstanding the above, the validity period of the offers may be extended by Assam Gas Company Ltd with the consent of the Bidder (s).

5.4 All terms & conditions stated in the tender paper shall be incorporated in the Purchase Order to avoid any future controversy/ dispute.

6.0 COMPLETION TIME:

The entire work of supply and delivery shall be completed within a period of six months from the date of issuance of Purchase Order or LOI. In case of delay in execution of the order, Assam Gas Company Limited, Duliajan may at its option, recover from the vendor price reduction of 0.5% of the total value per week of delay subject to a maximum of 5% of the total order value..

6.1 **Terms & Conditions of Supply of One Number Brand New Multipurpose Fire Tender:**

(i) Validity: 180 Days from date of opening of Techno-commercial bid.

(ii) F.O.R: Assam Gas Company Limited, Duliajan-786602, District: Dibrugarh (Assam).

(iii) Excise Duty: To be clearly mentioned by the bidder.

(iv) Taxes: To be clearly mentioned by the bidder.

(v) Delivery : 6 (Six) months from the date of issue of LOI/Purchase Order.

(vi) Payment: 90% payment of Purchase Order value will be made on delivery at site after acceptance test .and the balance. 10% of the Value of the Purchase Order shall be retained by the company as Performance Security till the end of the Warranty Period.

(vii) Inspection: At bidder's factory.

(viii) **Any other Taxes: To be clearly mentioned by the bidder.**

7.0 WARRANTY & POST WARRANTY SUPPORT:

7.1 The Contractor shall provide comprehensive on site warranty that the supplied item and associated items shall be free from defects in the design, engineering, materials, and workmanship that prevent the product and/or any of its components from fulfilling the Technical Requirements or the performance, reliability of the System and/or Subsystems. Commercial warranty provisions of products supplied under the Contract shall apply to the extent that they do not conflict with the provisions of this Contract. The Warranty Period shall be 18 months from the date of dispatch or 12 months from the date of acceptance at Duliajan, of Multipurpose Fire Tender whichever is earlier.

7.2 The bidder will provide a guarantee that on site maintenance service including spares for the supplied product will be available to the company for at least 10 (Ten) years after expiry of warranty period.

8.0 BIDDER QUALIFYING CRITERIA :

8.1 Bidder must be a manufacturer /or authorized dealer of the original manufacturer of Multipurpose Fire Tender having valid approval for supply and application. All relevant certificates like type test certificate, pattern approval certificate etc, must be enclosed. Bidder must have previous experience of in manufacturing / or supplying similar type of fire vehicles during 7(Seven) years ending from the last day of previous month of bid floating month. Documentary evidence of manufacturing / or supplying such Fire Tenders shall be required to be furnished with the Techno-commercial bid.

8.2 Documentary evidence of manufacturing / or supplying such Fire Tenders shall be required to be furnished with the Techno-commercial bid.

8.3 The Bidder will also have to submit the following:

(i). VAT & TIN Number.
(ii.) CST Number.
(iii.) UPTT Number.
(iv). Excise Registration.
(v). ECC Number.
(vi). PAN Number.
(vii). TAN Number.
(viii). SSI Registration Number (if any).
(ix). NSIC Registration Number (if any).
(x). Earnest Money in the form of Demand Draft.

The Company reserves the right to accept or reject any or all the Tenders without assigning any reason thereof. **Tender paper submitted without the documents mentioned above & the Earnest Money will be rejected outright.**

MANAGING DIRECTOR

COMMERCIAL SECTION

1.0 PAYMENT TERMS:

1.1 90% payment of Purchase Order value will be made on delivery at site after acceptance test. and the balance. 10% of the Value of the Purchase Order shall be retained by the company as Performance Security till the end of the Warranty Period.

1.2 No payment made by the Company herein shall be deemed to constitute acceptance of the supplied items.

1.3 All statutory levies such as Income Tax, Sales Tax, etc. will be deducted from" the amounts due" to the Bidder and the balance will be paid. Service Tax where applicable will be paid by the Company but the Contractor will have to submit proper service tax invoice as per rules of Service Tax Act.

2.0 SCOPE OF BID

2.1 Supply of Multipurpose Fire Tender as per Technical specification.

Detail Technical specification is enclosed at Serial Number 5.0.

2.2 : The rate should be quoted FOR Duliajan (Company's Stores) with break-up of basic transportation cost, sales tax, excise duty, education cess, and other charges, if any.

2.4 Proper Transportation and loading at manufacturer premises, unloading at Company's Stores of Assam Gas Company Ltd. at Duliajan, Dist : Dibrugarh, Assam 786 602 is to be included in the bidder's scope.

Delivery should be made within the specified time mentioned in the Purchase Order. In case of delay in execution of the order, Assam Gas Company Limited, Duliajan may at its option, recover from the vendor price reduction of 0.5% of the value of delayed items per week of delay or part thereof subject to a maximum of 5% of the total order value of items.

2.5 **The bidder will be required to furnish Technical Bid Compliance Statement and Commercial Bid Compliance Statement.**

***3.0* STANDARDS**

3.1 The materials shall conform in all respects as per IS Standard, with latest amendments thereof.

4.0 SERVICE CONDITIONS

4.1 The Multipurpose Fire Tender to be supplied against the Specification shall be suitable for satisfactory continuous operation under the following climatic conditions

i) Location : At Duliajan, Dist Dibrugarh Assam India
ii) Max ambient air temperature (deg.C) : 50
iii) Min. ambient air temperature (deg.C.) : 3
iv) Maximum relative humidity : 0 to 100%
v) Average thunder storm days/annum : 30 nos

vi) Average rainy days per annum : 150 days
vii) Number of months of tropical monsoon: 4 Months.

5.0 TECHNICAL SPECIFICATIONS :

GENERAL:

1.01 The multipurpose fire tender including all accessories shall be designed for electrical, oil and gas fire application and manufactured in line with relevant Indian Standards and sound engineering practice. **All valves shall be of Lever operated (high rated/passing proof) ball valves type except for any other type of valves mentioned anywhere else in the specification. All hoses shall be RRL-TYPE-B only ISI marked.**

1.02 The specifications mentioned here under lays down the requirements regarding material, design, construction, workmanship and finish, accessories and acceptance test of Multipurpose Fire Tender.

1.03 Equipment and accessories shall be fixed on the appliance in a compact and neat manner and shall be so placed that each part is easily & readily accessible for use and maintenance. **The centre of gravity shall be kept as low as possible.**

1.04 **All material/equipment shall be BIS marked & where BIS is not applicable the material shall be of high quality from a reputed manufacturer.** The vendor shall be responsible for supplying all equipments/accessories and properly fixing them on the chassis as described in this specification. Other details & requirements which are not covered under this specification ,but may be necessary to complete the Multipurpose Fire Tender and/ or to fulfil the operation /performance requirement shall be provided by the vendor , who will be responsible for the design & construction of the complete appliance to the full satisfaction .

1.05 The required accessories / equipments shall be supplied along with the Fire Tender. A list of accessories / equipments is given in the **ANNEXURE –A.**

1.06 The Multipurpose Fire Tender after completing the acceptance test formalities shall be delivered charged with **250 Kg OLFEX DCP** powder and expellant gas system fully charged.

2.0 CHASSIS:

2.01 The Fire Tender shall be fabricated and built on suitable new **TATA Model LPT 1613/42 Chassis** with the latest Indian emission standard compliance chassis & conforming to latest BS-III Emission norms having wheel base of not less than 4855 mm, payload capacity minimum 9 tonnes or more, with required BHP shall be bought by Vendor itself from TATA or its authorised dealer, within 30 days of placement of LOI/Purchase Order. **It should have cabin accommodating 01 driver+01 Officer + 04 Firemen.**

2.02 The Fire Tender should have gear box, tool kit, spare wheel assembly etc.

2.03 All wiring shall be properly fixed in position and shall be protected against heat, oil and physical damage. Wherever necessary, wiring shall pass through PVC sleeves and conduits.
2.04 All important electrical circuits shall have separate fuses suitably indicated and grouped in a common fuse box located in an easily accessible position.
2.05 Drag hook or eye of adequate strength & design shall be provided at the rear & front of the chassis. One towing hitch will be provided at rear portion for towing min. 1 Tonne tailor.

3.0 FIRE PUMP:

3.01 The multipurpose Fire Tender shall be mounted with Centrifugal type single/double stage CE marked capable of delivering minimum 2250 LPM @ 7.0 kg/cm^2(g) and should be powered through the Chassis Engine via PTO (power takeoff unit). The Pump should be capable of discharging not less than 150% of rated capacity at a head not less than 65% of rated head. The shut-off head of pump should not exceed 120% of rated head of pump. Party has to submit the test data at the time of inspection.

There shall be auxiliary ultra-high pressure plunger pump of 150 LPM @ 100 kg/cm2. It shall be plunger positive displacement type pump working to its capacity. A by-pass for letting the water back to the tank shall be provided to release excess pressure generated due to shutting of the hand lines. The pump shall have double seal on each plunger with low pressure intermediate chamber to keep the water seal cool and lubricated. The connecting rods shall be of special alloys with low attrition coefficient high wear resistance and high anti –seize properties. The hydraulic structure shall be designed to simplify scheduled maintenance procedures like gasket and valve replacement. The pump suction line have inline mesh filters. The pump shall deliver water to the hose reels and cooling system. The high pressure pump nut should be manufactured by the pump manufacturer only & no alteration or modification in construction shall be done by the fabricator. The pump should be CE certified.

3.02 PUMP PERFORMANCE:

The pump shall perform the following duties:
a) Normal Pressure output **2250 LPM @ 7 Kg/cm2**
b) High Pressure output**-150 LPM@100 Kg/cm 2**
c) The pump shall able to draw water from open water source (Suction lift of the pump should not be less than 1.5 meters).
d) The suction side of the pump shall be able to connect either directly to hydrant discharge outlets under pressure or to the water tank of the tender.

3.03 The pump shall be rear mounted on the chassis and shall be accessible and readily removable for use, repair and maintenance. The pump shall have its control panel. It shall be driven by the chassis diesel engine through the power take off unit and the propeller shaft. The Heavy duty full torque PTO unit shall be capable of transmitting power to pump by suitable propeller shaft.

3.04 The pump shall be of rigid construction and shall be made of Gun metal/ any suitable light alloy, compatible with fire fighting water and foam compound with stainless steel shaft suitable for use with

saline water. The pump impeller shaft made of Stainless Steel and shall be carried in antifriction bearings.
3.05 There shall be 4 x 63mm delivery outlets having standard gunmetal instantaneous female coupling with screw down type valves and blank caps. It will have twist type lugs made of gun metal.
3.06 The pump shall have one suction inlet of 100 mm round threaded type at rear side & should be provided with removable strainers. The pump shall be able to take suction from open water source &tank in normal condition.

3.07 The pump's impeller neck rings and impeller rings shall be renewable types and the gland shall be of self adjusting type. A drain plug shall be provided at the bottom of the casing. The impellers shall be made of Gun Metal/ High Grade light alloy/ Stainless steel.

3.08 Primer: The pump shall be fitted with a **Firefly / Supplier's make Automatic water ring type / Reciprocating Priming System. It shall be capable of lifting water from at least through 7.0 meter height at a rate not less than 30cm /sec.** It shall be of such design as would not lead to its mechanical failure, would be easy in maintenance and would work satisfactorily even if it has been left dry for a long period.

3.09 **AUXILIARY HEAT EXCHANGER FOR ENGINE:**
a) An auxiliary heat exchanger shall be provided to maintain the temperature in the engine at or below of the engine manufacturer's maximum temperature rating under all conditions for which the appliance is designed. The body of the heat exchanger shall be made of Stainless Steel (SS-316). / Brass Suitable pressure control valve shall be provided to restrict the pressure and flow of water from water pump as per requirement.

3.10 PUMP TESTS:

The pump shall also be tested for the following tests at OEM Testing Shop/ Fabricator shop:
a) Static Hydraulic test of assembly at 21 Bar.
b) Dry vacuum test shall attain 640 mm of Hg within 30 seconds.
c) Deep lift test- suction lift from 7.5 meters within 34 seconds at NTP condition.
d) The pump shall be kept running for a period of four hours non-stop delivering the rated low-pressure output with a suction lift of 3.0 Meters .

3.12 The pump shall be warranted for **minimum three years of satisfactory performance from date of receipt of Fire Tender at site**. Any approval from international or national certifying agencies as per relevant standards shall be provided.

4.0 POWER TAKE OFF UNIT (PTO):

4.01 A heavy duty full torque power take off unitSYALL/VAS/ Firefly (Fire Hawk) make of suitable gear ratio to match the engine & pump characteristics shall be provided.

4.02 A separate lever for engaging and disengaging the P.T.O. shall be provided in the driver's cabin.

4.03 Necessary support for PTO units, propeller shaft couplings, universal joints etc shall be provided for minimum vibration during PTO & pump operation. Necessary arrangement for cooling for PTO oil to be made.

4.04 The driver assembly component (shaft, couplings) shall be dynamically balanced.

4.06 The Ultra high pressure pump shall be engaged with the other side PTO provided with the chassis. This PTO would be of a proper gear ratio to drive the high pressure pump at the required RPM without loss of power from the engine & also preventing engine overheating.

4.05 The details of the PTO such as its make, name of manufacturer etc supported with catalogue/ drawing shall be submitted along with the offer and supply of vehicle.

5.0 FOAM PROPORTIONING SYSTEM(For Foam pick up from auxiliary):

5.01 An automatic proportioning arrangement should be provided so that pressure induction ratio of Foam Concentrate, Water Solution and flow of water are automatically varied merely by opening and closing of hand lines. Quantum of water at high pressure tapped from the delivery side of the pump is passed through the inductor which induces the foam compound into the water stream and brings the solution to the suction side of the pump.

5.02 Around the pump proportionate or (Suitable for UL listed foam conc.) should be fitted between the suction and the delivery of the pump, which will induct foam compound into the water stream with no loss in delivery pressure from the pump. The Proportionate should comprise of an inductor and selector valve which should have four parts calibrated to ensure the correct intake of the foam liquid at the required rate with respect to flow of water and supply solution for the operation of foam making equipment. The proportionate should be installed that it should not be liable to mechanical or other damage. Each upward setting will result into an equal increase in the foam concentrate flow rate.

5.03 Besides the above, when variable inductor is used in conjunction with the equipment for producing foam, an arrangement should exist by which proportionate quantity of foam concentrate at the stipulated ratio should get released and mix with water stream leading to suction side of the pump, which means more flow of water, more quantum of foam concentrate to meet the requirement of the equipment in respect of foam solution being discharges from the outlets of the equipment in operation.

5.04 As foam concentrate is available in the market under the band of 3% and 6% so while carrying out necessary tests, only 3% concentrate is to be used as the entire equipment for induction of Foam concentrated and aeration has been set in relation to the ratio of 3% for feeding the same into the pumps of the tender.

5.05 Auxiliary Connections: Auxiliary connection for foam pickup tube and isolation valve shall be provided to enable the foam compound to be induced into the pump directly from the drums or

outside source.

6.0 WATER TANK:

6.01 **Water Tank of 4,000 Litres capacity** made of **stainless steel** shall be suitably mounted on the chassis. It shall be fabricated out of Stainless Steel grade 316 sheet min. 5 (Five) mm thickness or more as required for bottom, and 4 mm or more as required for sides & tops. The baffles shall be of minimum 3.15 mm thickness or more as required. The Gas Tungsten Arc welding(GTAW) with ER 309 MOL electrode and 100% radiography should be followed. Radiography reports for the tank to be sent with the supply. The tank should have adequate or more as required MS/SS angle reinforcement.

6.02 It shall be provided with a baffles across with 450 mm manhole flanged to prevent surge while the vehicle is accelerating, cornering and braking and shall be so designed and mounted as to bring the centre of gravity as low as possible in the chassis. The baffles shall be arranged in a manner to facilitate the passage of a man throughout the Tank for cleaning purposes. Tank shall be mounted on three cross bars/bearers to counteract stresses caused by chassis flexing and shall be so secured that it can be removed. Baffles shall be minimum 3.15 mm thick. The bolting shall be so designed and mounted as to bring the centre of Gravity of the appliance as low as possible.

6.03 It shall be rectangular in shape and the mounting of the tank shall be flexible type to prevent the tanks distortion due to the chassis flexion. The mounting shall permit full contents of the tank to flow into the pump.

6.04 An inspection manhole of not less than 450 mm size or more as required shall be provided on top with hinged or removable cover and shall be marked **`WATER'.**

6.05 Suitable eyes bolt shall be provided on the shell of the tank to enable it to be lifted off the vehicle for repair /replacement as necessary.

6.06 The water tank shall be connected to the pump through inverted strainer and lever operated butter fly valve. The suction strainer shall be fitted inside the tank with a NSHT coupling.

6.07 A cleaning hole of 250 mm diameter or more as required shall be provided at the bottom of the tank with a 50mm dia drain pipe with a valve and plug connection and will be taken down to a point well below the chassis without reducing the effective clearance.

6.08 The tank shall be fitted with min. 50mm or as required. bore overflow pipes and the discharge end shall be taken below the chassis without reducing the effective ground clearance.

6.09 Vehicle should have following connections with pump and tank:

- Hydrant - Tank inlet two male coupling & NRV.
- Hydrant - Hose reel inlet.
- Tank –Pump - Hose reel.
- Tank –Pump - 04 nos. deliveries.
- Tank –Pump - Monitor (Foam/Water)

- Pump - Cooling tank.
- Hydrant –Monitor(Separate)

The filling connections in the tank will be of suitable diameter & shall be fitted with two 63mm inst. Male connections of GM with removable strainer & blank cap & NRV.

6.10A Water level indicator will be provided close to the control panel indicating Full, 3/4, 1/2, 1/4 & Empty etc. The tank will be connected to the pump with a manual butterfly valve at suitable location for ease of operation.

6.11 Water level indicator of the graduated glass tube with isolating cock valve (suitably protected) type or other suitable type shall be provided. This should be provided close to the control panel. One number of spare isolating cock valve should also be supplied along with supply.

6.12 The engineering of the tank should be of good quality so as to increase the life of the tank and should be of least maintenance or leak.

7.0 FOAM SYSTEM THROUGH AUXILLARY

7.01 One auxiliary foam compound pickup connection, inlet of which shall be on the suction side of the pump shall be provided to enable foam compound to be induced into the pump from the open foam supply/ drum. A pick up tube with strainer shall also be provided for this purpose.

7.02 Operational control procedure for operation of Foam system by using hose to be affixed at appropriate place on the tender.

7.04 Vehicle should have following connections for foam system:

- Inductor valve (Proportional).
- Pickup valve & Pickup inlet.

8.0 WATER FOAM MONITOR:

8.01 Since the fire tender is for the gas and oil fire application, there shall be one number of Water cum foam Monitor of 1400 LPM @7kg/cm2.

8.02 The monitor shall be connected through pipeline to the discharge outlet of the pump.

8.03.The monitor shall be lever operated and shall be capable of traversing through 360 degree in a horizontal plane, +75 degrees & -15 degrees in vertical plane.

8.04 The horizontal& vertical throw range of water and foam at 7 Kg/cm2 pressure shall not be less than 50 and 45 meters respectively in still air.

8.05 The monitor nozzle shall have a variation for fog pattern, jet and spray application.

8.06 A suitable place shall be provided for the operator to stand and operate the monitor comfortably in any direction.

9.0 HAND LINES:

There shall be four deliveries at the rear sides of the vehicle having standard gun metal instantaneous female coupling with screw down type delivery valves with blank caps. Each hand line shall be capable of delivering 2400 lpm of generated foam (Exp. Ratio-8) at a minimum pressure of 7.0 kg/sqcm (g). Each hand line shall terminate into foam making branch pipe of aluminium alloy and fitted with 63mm male instantaneous connection. It shall be possible to operate the monitor and hand line simultaneously. It should have twist type lugs made of gun metal.

10.0 HIGH PRESSURE HOSE REEL:

10.01 One first aid hose reel shall be provided and so as to be accessible for use from the either side of the appliance. Swivelling guide rollers shall be fitted, where necessary to prevent tubing from kinking.

10.02 Hose reel shall hold not less than 60 meters of 20 mm bore tubing hose, terminating in a dual purpose shut-off nozzle. Crows foot coupling shall be used for joining together the lengths of hose and to couple one end of the hose to the hose reel and the other to a high-pressure fog gun capable of discharging 75 LPM @ 100 bar in jet or fog patterns. The tubing shall conform to IS:5132-1969.The reel shall be provided with friction brakes to prevent overrun of tubing without affecting easy run of the wheel. The jet range shall not be less than 20 mtrs & the water droplets in the spray form shall be of approximately 150 microns at an angle of 45 deg.

10.03 The hose used for the hose reel would be rated for 130 bar working pressure(200 bar test pressure).

10.03 Plumbing between the pump and hose reel shall have clean and unobstructed water way of not less than 25mm throughout without any restriction.

11.0 DRY CHEMICAL POWDER SYSTEM / DCP UNIT:

11.01 DCP vessel shall comprise of single dry chemical powder vessel of capacity 250kg. Two (2) ISI marked hose reels for DCP discharge, necessary control systems / electrical systems, communications system etc. mounted on a chassis. Material used for fabrication to be specified in details with precautionary measures/treatment for avoiding corrosion and suitable for saline environment. Arrangement shall be provided to expel the powder from each of the vessels through hose reels and overhead monitors.

11.02 DRY CHEMICAL POWDER VESSEL:

a) The appliance shall have one vessel for dry chemical powder (OLFEX Indigenous-UL Listed-299C) having capacity of 250 Kg or as per standard. The location of the vessel(s) will be identified during the stage –I inspection for chassis. Inspection of DCP shall be carried out at the manufacturers' site before clearance for induction into the DCP vessel of this fire tender. The vessel

shall be designed, fabricated & inspected as per ASME Code VIII Div-I code for unfired pressure vessels. The material for the vessel shall be as per ASME/BIS codes. The plates shall be ultrasonically tested. The DCP vessel shall be mounted on the chassis with suitable foundation arrangements. The corrosion allowance for shell & dished end should be taken as minimum 2.5 mm. The vessel shall be designed for a working pressure 15 kg/Cm2(g). Design pressure 22kg/ Cm2(g) and hydro testing pressure 30 Cm2(g). The hydro test certificate should be submitted.

b) The vessel shall have treatment for anti-corrosion on internal surface with lead tin alloy (tin not less than 10%) having minimum thickness of 0.12mm.

c) The vessel shall be provided with filling aperture of 18" diameter with flanged cover at top and drain hole of 10" diameter at bottom with flanged cover. Drain hole shall be above differential.
d) Vender shall submit the design calculations along with drawing for the DCP vessel/s along with the bid indicating material specifications, design pressure, test pressure, radiographic requirements, adopted thickness for shell and dished end etc.
e) The DCP vessel/s shall be cylindrically shaped and shall be hermetically seating type cap with easy means for removing for the purpose of re-filling dry chemical powder.

f) The vessel will be fitted with Pressure Safety valve, pressure gauge, pressure reducing device, Isolation Valve, charging valve fitted at suitable location. Vessel shall be provided with a blow valve or similar device on top to discharge N_2 gas in the atmosphere without discharging powder. The safety valve shall be installed on top of vessel at suitable location. The capacity of the valve shall be sufficient to release excessive pressure in case of failure of pressure reducer. The setting safety valve should be at 16 kg/ Cm2(g).

11.03 FREE FLUIDITY OF DCP:

a) To ensure proper fluidity of the powder appropriate numbers of high pressure diffuser nozzles shall be suitably placed at the bottom of the vessel through which gas under pressure shall be discharged. Suitable arrangement shall be made to ensure that diffuser nozzles are not blocked under any circumstances. The diffuser nozzles should be fitted with synthesised filters.

b) The DCP vessel shall be charged by the Vendor with 250 kg or as per standard dry chemical powder **OLFEX Indigenous-UL Listed-299C (Potassium – Urea mixture)** in presence of representative and the vessel shall be sealed by representative before dispatch to site. **Permanent marking of "Dry Chemical Powder" filling height** should be considered /marked to avoid over-filling of vessel.

c) DCP system will have N_2 as an expelling agent. The vessel will have min. 4 numbers of N2 cylinders as per design requirement /250 kg, to ensure that 90% powder is discharged. Engineering Design calculation must be submitted by the vendor along with the offer.

d) Operational control procedure for operation of DCP system by using monitor & hose reel to be affixed at appropriate place on the tender.

e) Efficient means shall be provided for flushing the hose reels and Monitor with expellant gas after use. The operation Lever shall be located at the control panel. Arrangement shall also be made with valve to flush hose reel with air from outside.

f) Main Ball valves of DCP system should be operated with through setting with easily manual operable lever and should have quick locking / unlocking arrangement at desired position.

11.04 NITROGEN CYLINDERS:

a) DCP vessel shall have its expelling gas cylinder assembly to discharge dry chemical powder through two DCP nozzles connected to hose reels. DCP vessel shall have independent expelling gas system consisting of Nitrogen cylinders of 54 litre/suitable water capacity to expel the total DCP.DCP Flushing system after use will be a part of this system, Flushing lines, checking pressure with 10% excess nitrogen gas. Nitrogen gas shall be filled at max. of 140 kg/ Cm2(g). The cylinder batteries shall be mounted in a frame in horizontal position with easy & independent removal or placement of each battery. The frame shall have the anti-corrosive treatment. The efficiency discharge throw of each unit shall not be less than 90% of the total charge.

b) Nitrogen cylinders shall be provided with quick operating valve & the cylinders with valves must be of approved type by PESO/CCOE Nagpur. Certificates of the same shall be submitted to the at the time of supply. The DCP vessel shall be provided with suitable device to maintain the fluidity of the powder at all times. Drawings of the Nitrogen cylinders/valves are to be submitted to at the time of supply.

c) 100% filled spare Nitrogen cylinder numbers (If actual 04 cylinders then 04 spare cylinders) of same capacity shall be supplied separately along with the combined tender. The main N2 cylinders will be installed on the chassis horizontally or suitably.

d) Nitrogen cylinders shall be fitted with back flow valves to prevent return of N2. The operating valve of N2 cylinders shall be of trigger/lever type arrangement shall be such that these valves can be operated one at a time and all at a time with one lever.

e) An independent connection from N2 cylinder of manifold shall be provided for flushing powder from hose reels, DCP Monitor, nozzle etc. with expellant gas after use. An additional connection with valve shall be provided for flushing the complete system with air N2 from external connection.

f) Arrangement shall be made to check the pressure of each N2 cylinder without removing the cylinders.

g) All valves, discharge nozzles, pressure gauge, pressure reducing device. Pipes and fittings shall have BIS mark or approval of Competent Authority or certifying agency. The manufacturer / supplier of these items shall provide the necessary certificates to this effect. Also they should be non corrosive, non reactive material compatible with dry chemical powder.

11.05 DCP MONITOR:

a) There shall be a separate long-range DCP monitor on the top at suitable location. The platform should be adequately strengthened to avoid any kind of vibration while monitor in use. There shall be sufficient space around the platform for movement of the operator. The monitor should be connected to the vessel with pneumatic operated ball valve for easy operation of monitor. The operating machine of monitor should be cup and cone type valve.

b) The monitor shall have throw of 45 meters at 45 degree. The discharge through of the monitor shall be adjustable at 15, 25 & 40kg/sec. at an operating pressure of 14kg/ Cm2(g). The monitor shall be lever operated and shall be capable of traversing through 360 degree in a horizontal plane, +75 degree up and -15 degree down in the vertical plane. Monitor shall have blank cap to prevent any foreign material/water from outside.

11.06 DCP HOSE REEL:

a) Two (2) numbers ISI marked hose reels (one each on either side) shall be provided at easy location for discharge of DCP. The hose reel shall be quick rolling type with ball bearing with external flushing connection. An arrangement shall be made to prevent the over running of the hose. Each reel shall be provided with 30 meter long high pressure pneumatic reinforced Rubber hose of suitable bore of 25 mm fitted with trigger type pistol grip nozzle.

b) The discharge rate of the powder shall be minimum 2.5 kg/sec as per amended IS- 10993 through each nozzle and the throw shall not be less than 10 m at 45 degrees to horizontal and 8 m vertically while working with both the hose reels.

c) The hose reel shall be pressure tested to the design pressure of vessel and each hose reel shall be connected to the vessel to enable to operate both hose reels at a time.

12.0 PIPING SYSTEM DETAILS:

a) All piping should be sized so as to have minimum pressure drop and achieve the required pressure and flow at various locations.

b) All pipe fittings and valves should be MS / SS - 304 / SS - 316.

c) All piping should be seamless and designed for 10% over the maximum pressures encountered in the pipe.

d) The piping should be flanged for ease of maintenance. However, flange joints should be kept minimum.

e) Valves of less than 1.5mm NB size should be forged and valves more than 2mm NB size can be of cast construction.

f) All lines should be hydraulically tested at 1.5 times the design pressure However, in no case should the lines be hydraulically tested below 18 kg/cm2(g).

g) All lines should be suitably supported so as to provide rigidity and avoid vibrations.

h) All lines less than 1.5mm NB size can be socket welded to matching 3000Kg/scum (g) rating fittings. All lines above 2mm NB size should be butt-welded with full penetration welds.

i) All gaskets in foam lines should be spiral wound with SS-304 and asbestos filler.

j) All bolting should be of SS-304.

k) An SS Y- type strainer should be provided before the pump. The strainer should be so located so as to permit easy removal of strainer element.

l) The draw off pipe should be provided in such a manner and in such a position that sludge not pass into piping.

13.0 BODY WORK:

13.01 Enclosed accommodation shall be provided for Driver, One Officer in the front and seating arrangement for a crew of 4(Four) persons shall be made at the rear of the Driver's seat. The Driver's cabin shall be four door types. Both the seats in the front shall be independent. The driver's seat shall be adjustable type. The rear area of compartment of driver's cabin shall have one fixed seat for full width of cabin for crew members. The rear compartment of Drivers cabin shall also have folding type of back rest which can be converted to sleeper type. Necessary hangers, hooks, chains etc. shall be provided to convert the seat into sleeper. All seats shall have foam cushions and shall be covered with good quality Rexene. Door on either side shall be fitted with safety glasses and winding type regulators. The glasses on all windows and doors shall be fixed in aluminium sections & shall be fitted on rubber beading including wind screen glass to absorb the extra pressure/jerks when the fire tender is moving. Door locking arrangement with single key operation shall be provided. The driver's cabin floor shall be padded with aluminium chequered plate 1.5mm thickness and covered with good quality PVC mating. One roof light shall be provided in the driver's cabin. Dual sun visors and long arm outside fitting rear view mirror shall be fitted to the cab. Door hinges should be high quality and capable to take load of entire door without deformity.

13.02 Arrangement to stow the blowing alarm (BA) sets in the recessed back rest of the crew member seats shall be provided. The mechanism shall have locking and unlocking facilities to ensure proper fixing of BA sets in place. The arrangement shall be such that when BA sets are stored in the back rest, they shall not hamper the seating comfort of the crew members. The arrangement shall also facilitate easy donning of BA sets by Firemen while seated.

13.03 The rear removable seat shall have box type arrangement to accommodate fireman axe, one tools box, one Mechanical Jack, one hydraulic jack with Tommy bar and other important equipments, hooks shall be provided above the rear seat at suitable height for hanging helmets etc. Battery shall be placed in independent & totally enclosed box with double compression gland for cable entry.

13.04 The equipment's lockers superstructure Fabrication shall confirm to Motor Vehicles Act & BIS. Shutter space below chassis shall be fully utilised.

13.05 Roof and panel will be made of aluminium padded plate. The roof can be walked-on and is surrounded with rail guard of suitable size made of non rusting material. The intermediate walls and shelves partially are made from aluminium padded plate panelled to the structure by of glue without any welding work.

13.06 **Mounting of Superstructure:** Direct mounting of superstructure onto the chassis frame shall not be done. The equipment locker superstructure shall be done mounted elastically rubber steel brackets (Met cones) and on steel sub frame made from Hot Dip Galvanised MS 4" section for better load distribution of superstructure load. The superstructure shall be bolted with chassis using the high tensile bolts.

13.07 All lockers having shelf above chassis. A suitable space shall be provided to keep 20 lengths of 63mm size delivery fire hose each of 15 m length with 4 numbers adaptors of 63mm male to male and female to female instantaneous each. There shall be four numbers 100 mm suction hoses which shall be provided on the roof of the tender with proper arrangement of their fixing with guard to restrict forward & back ward movement. Sufficient number of lockers for storage of equipments shall be provided with external access and at such height of about 1.67 meters. For easy operation of the Fire Tender roller shutters shall be installed covering DCP equipment control panel lockers. Roller shutters are rolled inwards, underneath the roof giving so as to be accessible from ground level. The top of lockers shall have roof, thereby providing a working platform for access to tank tops and also the roof mounted monitors. The bottom& sides of all the lockers should be covered with chequered aluminium plate of 2.0 mm thickness to avoid bending of the plate.

13.08 All the lockers, pump panel, pump compartment and deck shall be fitted with adequate lighting with proper guards and suitably located **`ON-OFF'** switches. A master switch for isolating the locker lighting circuit shall also be fitted in the driver's cab.

13.09 All the lockers shall have suitable racks with shelf and with snap coupling belt fasteners to keep equipments like branches, nozzles, dividing & collecting breechings, collecting head, foam extensions, rescue line (manila rope) etc in its place and order.

13.10 All the lockers shall have provision of self drainage for all wash down water.

13.11 Grab rails (Double) and non-slip step of chequered plate shall be provided to give access to the roof of the appliance for easy and speedy removal and mounting of ladder on both sides.

13.12 A "**GRAND"** / Equivalent standard make battery operated Multi tone hooters & mike system with amplifier, & microphone in the driver cabin& Flashing light BEACON system shall also be provided at roof of drivers cabin.

13.13 One standard make loud speaker shall be mounted on the driver's cabin roof. Amplifiers and microphone control switch shall be provided in front of officer's seat in sealed box. One battery operated siren (high rating & water proof enclosure) shall be provided at drivers cabin roof top.

13.14 Ladder with Ladder gallows of roller type shall be provided on the roof of the vehicle for easy placing/removal of 10.5 m aluminium extension ladder. The aluminium two piece extension ladders

shall be mounted on suitable gallows fitted with rollers and designed to facilitate easy & quick removal of the ladder by one man from the rear of the appliance. The ladder in general shall confirm to IS: 4571

13.15 All electrical system including that of the chassis should be dipole and reach through conduits and terminals in flame proof junction box. Battery cut off switch should be provided inside cabin.

13.16 The entire structure of appliance including that of drivers cabin shall be welded structure made of 14 SWG MS pressed section and channels structural steel (IS 2062) with minimum 3mm thickness aluminium panelling. Complete flooring shall be of 10 SWG aluminium chequered plate.

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13.17 The control panel of foam /water operation shall be done on aluminium sheets of 16 SWG.

13.18 The vehicle shall be covered from Top with 10 SWG aluminium chequered plate having rainwater channel at both side. The openings for equipments shall be sealed properly to ensure no water goes inside.

13.19 No part of bodywork shall reduce road clearance to not less than 36 cm nor increase the overall width more than 2.50m .the highest part of the appliance with the ladder and monitor mounted on it shall not reduce the angles of approach & departure below 30 degrees.

14.0 CONTROL PANEL:

14.01 Appliance shall have separate control panel for water cum foam operation and DCP system.

14.02 The panel for water/ foam system adequately illuminated shall be provided with the fire tender. All controls of the system shall be spaced properly & marked for easy operation. All valves shall be of lever operated type & shall be made of SS with Teflon seats.

14.03 For DCP system adequately illuminated operation control panel shall be provided on Right side (Driver's side) of the fire tender. The operating levers, pressure gauges etc. shall be mounted on the control panels at suitable location. No valve shall be of wheel type.

14.04 All other controls like electrical siren, PA system shall be provided at the driver's cabin. All control panels shall have clearly written operating instruction plate. Adequately illuminated operating panels shall include the following:

a) Auxiliary throttle control for the engine.
b) Pump pressure gauge Normal Pressure Gauge: 0 – 21 Kg/ Cm2(g)
c) Hydrant connection for water tank filling pipes.
d) Delivery outlets of the pump along with the control levers and blank cap with chain.
e) Suction inlet of pump with blank cap & chain.
f) Control for using auxiliary foam pick-up tube.
g) Operating instruction plate; & flushing out instruction plate.
h) Ball/butterfly valve for water tank to pump.
i) Control for flushing out foam Equipments & piping.
j) Compound Gauges- Vacuum from 0-760mm mercury & 0 to 7 kg/ Cm2(g).

k) Valve for Hose reel and water monitor.
l) Light point of Panel.
m) Drain valve.
n) Valve for foam compound from auxiliary to foam proportioned.

14.05 In addition to the items mentioned above, Vendor 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.

15.0 FITTINGS & ACCESSORIES:

15.01 The Multipurpose Fire Tender shall be provided with the following accessories in addition to those normally fitted to the chassis. All the accessories shall be suitably fixed in position or shall be kept in lockers or other suitable place as on the tender.

a) Electrically operated Siren - 01 No. 12- 24 V with range 1km. to be mounted externally on Top.
b) Fog lamps powered by the battery of the Vehicle, these shall be low mounted in front of the vehicle - 02 Nos.

c) Reversing lights with horn - 02 Nos., suitably situated to assist reversing.

d) Blinker type traffic indicators - 02 Sets.

e) Good quality Search light with 100 meter. length of cable having 100 watt luminescent with tripod etc. complete - 01 Set.

f) Portable Inspection Lamp with brackets to be clamped to the battery-01 No.

g) Removable CCE Approved spark arrestor fitted to the exhaust of the engine - 01 No.

i) Wind screen wipers (Electrically operated of approved design) if not provided with the chassis

j) Public Address System: (Philips / Ahuja/Grand make) Battery operated with a control panel in driver's cabin shall be provided. One loud speaker shall be mounted on driver's cabin roof. The range shall be 1 KM in still air and not less than 500 meters in noisy areas.

k) List of Equipments as per **ANNEXURE-VIA** shall be provided along with the Fire Tender.

l) Details of Equipments with respect to. Make/Brand shall be submitted in **ANNEXURE-VIB**.

16.0 WORKMANSHIP AND FINISH:

16.01 The Fire Tender shall be fabricated with the best light weight material and good workmanship, ensuring effective and efficient operation of the Fire Tender.

16.02 The standard of workmanship and finish of all mechanical and other parts should be such that the parts normally required to be replaced can be easily & conveniently replaced and fitted correctly.

16.03 The Gross Vehicle Weight (GVW) of the DCP cum Water Fire Tender should not exceed the GVW of chassis manufacturer's specification with all equipments & crew .**The weight distribution diagram & design calculation shall be submitted for approval .**

16.04 The cab and lockers shall be of composite construction with sufficient rigidity and reinforcement and shall be kept as light as possible; sections of sufficient strength shall be used for the superstructure. Lockers shall be provided for secure stowage of all accessories and equipments provided with Fire Vehicle. All equipment would be stowed very scientifically and systematically and each piece of equipment shall have its designated location so that at the time of Emergency the required equipment can be very easily located and removed for use. Location of equipment (labels) shall be provided on each locker for immediate identification. Each equipment would be properly clamped and strapped to prevent shifting of the equipment while the vehicle is in motion.

16.05 The roller shutters shall have smooth operation. The aluminum shutters shall be of reputed make& made of extruded aluminum & powder coated. All the required lockers & rear pump compartment shall be covered with shutters. The shutters shall be of roller type .The shutter doors shall be equipped with switch on the door tracks to provide automatic switch on/off of compartment lights. All the space below the rear body and chassis shall be utilized for making lockers for storage of equipment. These lockers shall be covered with flap type doors opening downwards. Heavy duty chains and hinges shall be provided on these doors so that these doors when open can be used as climbing steps for access to the lockers above it.

16.06 Suction hose tunnels shall be provided to carry four 2.5m lengths of suction hoses in convenient location. Drain holes preferably at the bottom of the tunnel and hose stowage compartment is required.

16.07 Drag Hook or eye of adequate strength & design shall be provided at the rear and front of chassis.

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16.09 All wiring shall be properly fixed in position & shall be protected against heat, oil & physical damage wherever necessary wiring shall pass through PVC sleeves. All important electrical circuits shall have separate fuses suitably indicated and grouped in a common fuse box located in an easily accessible position. Provision shall be made for a minimum (4) spare fuse in the fuse box.

16.10 Circuit shall be provided with properly rated low voltage over current protective devices. Such devices shall be readily accessible and protected against the excessive heat, physical damage and water spray.

16.11 Battery master isolation switch shall be provided near the dash board or at convenient locations for the driver to operate.

16.12 The dash board panel in the driver's cabin shall be provided the following:

a) Engine oil temperature gauge.

b) Engine oil pressure gauge.

c) Ammeter for reading battery charging rate.

d) Air pressure gauge for the braking system and pneumatic system.

e) Fuel tank contents gauge calibrated in liters.

f) Odometer calibrated in Kms

g) Speedometer calibrated in Km/ hr.

h) Tachometer.

i) Siren switch.

j) Ignition switch.

k) Engine cooling water temperature gauge.

m) Master Switch for Batteries.

17.0 PAINTING & MARKING:

17.01. The appliance shall be painted in 'Fire Red' (two coat) conforming to shed 536 of IS- 5-2004 and of 0.12 to 0.2 mm thickness, using double coat spray painting. The paint (synthetic enamel paint) shall conform to IS 2932. Necessary anti-corrosion and priming coat shall be applied before painting in order to achieve gloss finish. The under chassis shall be painted rust proof black paint.

17.03 Also on either side of the Vehicle **(Logo of Client and name: Assam Gas Company Limited, Duliajan**) monogram shall be made computerised & affixed (adhesive HDPE sticker type) in golden yellow colour at suitable places bilingually in Assamese & English.

17.04 The driver's compartment shall be laminated with suitable synthetic material.

17.05 Diesel truck shall have Name Plate showing main features: Name, Model No., Serial No. of unit and year of manufacture. Plates of truck number should be fixed.

17.06 All the piping shall be painted with antirust primers and final coat of Red.

17.07 The vehicle shall be clearly and permanently marked with the following, mandatorily on a metal plate near pump operating control panels:

a) Manufacturer's name or trade mark.
b) Year of Manufacture.
c) Pump number & Capacity of Pump in l/min. Capacity of Water tank, Foam tank & DCP vessels.
d) Engine and chassis number.
e) All instrument controls shall be identified with name plates
f) All hoses & valves inlet & outlet shall also be identified by suitable name plates.
g) DCP system along with DCP Vessel pressure Test and next due date.
h) Foam from auxiliary/ water system drawing/ line diagram with valves etc.
i) DCP Vessel PSV calibration set pressure & date.

18.0 ACCEPTANCE AND PERFORMANCE TESTS:

18.01 Following test shall be carried out before accepting the vehicle, either at manufacturer's works or a place to be mutually agreed upon by the vendor to the complete satisfaction of owner's inspector without any extra cost.

18.02 The design of the Tender shall be such that it will not affect the chassis characteristics as specified by the chassis manufacture such as speed, turning circle, acceleration, breaking efficiency with appliance fully loaded, etc.

18.03 The stability of the appliance shall be such that when in fully equipped and laden condition , if the surface on which the appliance stands is tilted to either side, the point at which the overturning occurs is not less than angle of 27 ½ " from horizontal.
18.04 The pump shall run for a continuous period of minimum 4 hours at the rated capacity mentioned earlier. During test the temperature of engine should not exceed the rated temp& that of lube oil 79 degrees C.

18.05 The priming device shall be tested with a vertical lift of 7.0 M measured from water level to the centre of suction eye of the pump at a rate of not less than 30cm/sec.

18.06 The monitor and hand lines, separately and in combination as mentioned earlier shall be tested for delivering foam at their rated capacity and horizontal range.

18.07 Foam making equipments shall be applied to check the induction ratio of foam compound ,total foam discharge rate and expansion ratio of foam production using the foam compound (AFFF 3%) available in India as per IS:951. Manufacturer's test certificates are required.

18.08 All the piping shall be tested to a hydrostatic test pressure of 18.0Kg/cm2 for a min. period of 2.hrs. Test certificates to be provided.

18.09 Water tank shall be tested for leakage after fabrication before applying any paint.
The tanks shall be kept full with water and shall be observed for 24 hrs for any leakage.

18.10 DCP vessel shall be hydro tested to a pressure of 30kg/sqcm.
18.11 The arrangements of flushing the DCP lines shall be tested.

18.12 For DCP system, the monitor and hose reel shall be tested for delivering DCP at their rated capacity and required throw. Ordinary DCP powder may be used for testing instead of Olfex powder, for this no extra cost will be paid .

18.13 All the test certificate related to the pressure vessel as per ASME vessel code and test certificate accordingly submitted to owner. Quality of material of vessel and thickness of vessel plate shall be inspected and stamped by a recognised third party, inspectors and shall be produced at the time of First stage inspection.

19.0 DOCUMENTS/INFORMATION/ INSTRUCTIONS REQUIRED FROM VENDORS:

19.01 Bidder shall submit following with offer, Non submission of the Same shall lead to Rejection of the Offer.

a) The basic layout of the tender (G.A Drawing) in A-0/1 size preferably as per requirement.
b) Experience in fabrication of Multipurpose fire tender.
c) Details of all Test facilities at site.
d) Flow diagram of Fire tender.
e) Load distribution calculation.
f) DCP Total calculation
g) **Layout drawing showing the detailed engineering and calculation in respect of water tank & DCP tank the specification listed in this tender.**
h) The firm shall enclose the list of Accessories / Equipment's make / brand duly filled in as per Annexure VI-B.
i) The firm shall enclose an undertaking to provide spare parts & service for the supplied Fire Tender (except chassis) for next five years from the date of supply.

19.02 After award of order following documents are to be submitted before fabrication for approval:

- Detailed Flow diagram of the appliance(Indicating pipe sizes)
- Plan and elevation of the appliance showing various equipments.
- Pump characteristics & performance curves with the pump working on hydrant & the Water tank, with manufactures catalogues & model no. etc.
- Design calculations for all the vessels indicating material specifications, design pressure, adopted thickness for shell &dish end.
- Line diagram showing all piping and valve etc.
- Line diagram of all electrical circuits.
- Catalogues & technical details for all major parts like Pump, PTO, Chassis etc.

19.03 On placement of order, Vendor shall submit the stage wise inspecting plan for approval of Job shall be undertaken after receipt of approval.

19.04 Technical Documents to be supplied by bidder along with the appliance

- Operation & maintenance manual along with parts list-two sets
- All technical literature of major brought out items-two sets
- Original/transparencies after incorporating the as built information shall be got signed by the Inspection engineer before submitting for records.-two sets.
- Final drawings as mentioned in specification - two sets
- Import documents for imported equipments (if any)-two sets.

- ISI Mark Certificate, PESO/CCOE approval certificates in respect of all corresponding equipments etc. Radiography & Test certificate of all the vessels, safety valve etc.-1 Copy each.

19.05 MANUFACTURER'S GUARANTEE:

The manufacturer shall guarantee the material, workmanship and the performance of the unit for a period of one year from the date of delivery of fire tenders at the plant site and commissioned. The guarantee shall include all the inbuilt material, accessories appliances, any mechanical defects, faulty workmanship or operational defects found during this period shall be rectified by the Vendor without any extra cost.

19.06 INSURANCE:

Bidder shall arrange for all insurance liabilities including transit period, from the time the chassis is taken over by the bidder from TATA/Ashok Leyland /MAN/ its Authorized Dealer for fabrication of Multipurpose Fire Tender till the time it is delivered back to site complete in all respects. The bidder shall bear all costs associated with such insurance, Entry tax etc and the same shall be arranged with beneficiary. Copy of all relevant documents for such as Insurance etc. shall be handed over by bidder to immediately after taking over of chassis from TATA/Ashok Leyland / MAN / Authorized Dealer etc.

20.00 INSPECTION:

Owner or its authorised agency/person shall have access at all times to vendor's works where the appliance and its accessories are being fabricated. Vendor shall arrange all the facilities to carry such inspection & testing.

There will be four stage inspections including final:

First stage: Chassis Inspection, Material of construction & positioning of tanks/vessels on the chassis.

Second stage: Construction of super structure, Water& DCP Vessel and driver cum crew cabin.

Third stage: Placement of all tank/vessels, fittings, lockers & pump.
Fourth stage: Testing of all equipment, systems etc.

For Multipurpose Fire Tender:

A. **Basic Requirement :**

CHASSIS	**TATA LPT 1613/42 /4855 MM, WHEEL BASE**
PUMP	**2250 LPM @ 7 KG/CM2 / OPTIONAL HIGH-LOW PRESSURE FIRE PUMP**
PRIMER	**FULLY AUTOMATIC RECIPROCATING**
PTO	**FULL TORQUE DRIVELINE PTO DUAL OPERATION – MANUAL & PNEUMATIC**
WATER TANK	**4000 LTRS. CAPACITY MOC – SS 304 GRADE**
FOAM TANK	**500 LTRS. MOC – SS 304 GRADE**
WATER CUM FOAM MONITOR	**MANUALLY OPERATED**
DCP	**75KG X 2 NUMBERS CAPACITY**
MOUNTED EQUIPMENT	**4 NOS. CO2 CYLINDERS - 22.5 KG. EACH**
ACCESSORIES	**As per ANNEXURE- VI A**
SPECIFICATION	**AS PER Detail Technical Specifications**

B. **Detail Technical Specifications:**

Sl No	SPECIFICATIONS OF ITEMS	QUANTITY
01	**Fabrication/ Manufacturing and supply of Multipurpose Fire Tender to be fabricated on TATA Model LPT 1613/42 Chassis , SS 304 Water Tank having capacity of 4,000 Liters, SS 304 Foam Tank having capacity of 500 Liters, Centrifugal Fire Pump having capacity 2,250 LPM at 7.0 Kg/Cm2(g), PTO having step up ratio of 1:1.27, Automatic Water Ring Type Primer, Indirect cooling System, Round the pump proportioning system, Foam Monitor having capacity of 1,400 LPM at 7.0 Kg/Cm2(g), First Aid hose reel 19 mm x 60 mm long, 75 Kg x 2 Numbers DCP, 4 X 22.5 Co2 Extinguisher. Complete fabrication shall be carried out as per IS:10460**	**01(One) Number**
02	**Supply of Chassis Model TATA 1613/42 for fabrication of Multipurpose Fire Tender including procurement with to and fro transportation charges from manufacturer or Authorized Dealer of TATA.**	**01(One) Number**
03	**Schedule of Equipment as per ANNEXURE- VI A**	**01 (One) Set**

ANNEXURE-VIA

LIST OF EQUIPMENTS & ACCESSORIES TO BE STORED/SUPPLIED ALONG WITH THE MULTIPURPOSE FIRE TENDER (AS PER IS:10460-1983)

Following Accessories also shall be provided with MULTIPURPOSE FIRE TENDER:

SI.NO.	Description	Qty.
1.	A 10.5 meters aluminum trussed type double extension ladder.	1 No.
2.	PVC suction hose heavy duty complete with copper alloy round threaded couplings to suit the pump inlet – 2.5m long.	4 Nos.
3.	Universal Suction wrenches for suction coupling	2 Nos.
4.	Cylindrical GM Suction strainer according to pump inlet, IS:907	1 No.
5.	Basket strainer suitable for item 4 , IS:3582.	1 No.
6.	**Dividing breaching with control arrangement as per IS:5131**	2Nos.
7.	**Collecting breaching as per IS 905**	2 Nos.
8.	**Hose Bandages Rubberized**	12 Nos.
9.	**Hose Clamps**	6 Nos.
10.	**Hose Ramp**	4 Nos
11.	**Hydrant valve key & bar**	1 Set
12.	**Double female coupling**	2 No.
13.	SS Short Branch pipe, IS:903, **ISI Marked.**	4 Nos.
14.	**Adapter for 100mm suction female screw coupling and 63mm male instantaneous.**	2 Nos.
15.	**Adaptor double female instantaneous pattern 63 mm, IS:901**	2 Nos.
16.	**Adaptor double male instantaneous pattern 63 mm, IS:901**	2 Nos.
17.	Nozzle spanners, IS:903	2 Nos.
18.	SS Fog nozzle with extension applicator with fog head	2 Nos.
19.	SS London pattern Hand Control Branch pipe 63mm	1 No.
20.	Universal Branch Pipe	1 No.
21.	Branch Pipe with revolving head	1 No.
22.	Water curtain nozzle	1 No.
23.	**Multipurpose Hand Held Nozzle** shall be made of light alloy extruded construction conf. To 64430-WP Grade, twist type control for straight jet, spray and wide angle fog, capable to operate efficiently at low pressure 3.5kg/cm2, facility of solid jet and fog simultaneously or independently, discharge capacity at 5kg/cm2 pressure more than 500 LPM for jet and 300 LPM for spray, (i.e. combined discharge capacity – 800 LPM and Horizontal Jet throw in still air more than 35 Meters. at 5-6 kg/cm2 pressure, provision for change over to flush without shut-off, superior quality and design of rubber grip, twist shut off from fog to stream, provision of teeth to provide dense fog, Control Lever for ON-OFF Position 63 mm size inlet connection, pistol grip handle for better, hard anodized to prevent from corrosion and wear for better control to fire fighter.	1 No.

24.	**Multi Gallon age Hand Held Nozzle** shall be made of Light alloy extruded construction of 64430 – WP Grade, hard anodized black to prevent from corrosion or wear, twist type control for straight jet, spray and wide angle fog, having arrangement for five flow selection from 350 to 900 LPM by twist , horizontal reach Min. 35 Meters at 7 Kg/cm2 pressure, Pistol grip type handle for better grip, provision for change over to flush without shut-off, Replaceable spinning teeth ring for fog curtain, Ball valve type handle for shut off, 63 mm size Male instantaneous inlet connection.	1 Nos.
25.	Long line with Manila 50 mm circumference, 30 m long	2 Nos.
26.	Short line with Manila, 50 mm circumference, 15 m long	2 Nos.
27.	First aid box for 10 persons	1 No.
28.	Electricians Hand Gloves resistant to 33 KV	2 Pairs
29.	Axe large, IS:703	1 No.
30.	Pick Axe (IS : 273-1973	2 No.
31.	Crowbars 1 m long (IS : 704-1968)	1 No.
32.	Flat file	1 No.
33.	Spanner adjustable 30cm long handle	1 No.
34.	Hydraulic Jack, 10 Ton	1 No.
35.	Grease Gun with 1 kg grease	1 No.
36.	Water Jel blanket of 8'' x 6'' size	2 Nos.
37.	Face Shields with chin & brow guard with ratchet head gear	2 No
38.	Tool box with Non sparking D and ring spanner from 10 mm size to 46 mm size. 1hacksawframe 12hacksawblades, 2 cold chisels 12.5 mm and 25 mm 1 screw driver- insulated,1 bolt cutter.	1 Set
39.	Modern Apparel make three layer Fire Suit complete with boots, gloves packed in galvanized case.	1 No.
40.	Synthetic RRL TYPE-B,UL ListedFire Fighting Delivery Hose 63 mm X 15 meters, bearing IS : 636 -1988 type B & CE marked duly bounded with GM heavy duty Hose Male and female coupling, IS 903 mark.	10
41.	Dragger make portable LEL(Explosive) cum O2 meter with charger and Calibration certificate.	1 no.
42.	Search light (Heavy duty) with cable length of 20 metres and connections.	**01 nos**
43.	**Fire Jacket with radium reflective tapes**	**06 nos**
44.	**Spare wheel for chassis including Rim, tyre & tube.**	**01Nos**
45.	**Self contained Air breathing apparatus (SCBA) with steel cylinder of at least 45 min working duration of 6/liters/300 bar, duly CE marked to EN 137 & Face mask to EN 136cl3 & cylinder & valve shall have NOC from CCE-Nagpur**	**02 sets.**

Details of Make/brand & Model shall be submitted as per ANNEXURE-VIB

ANNEXURE -VIB

LIST OF ACCESSORIES / EQUIPMENT'S MAKE / BRAND FOR
MULTIPURPOSE FIRE TENDER

Sr. No.	Accessories / Equipment Description	Make / brand & Model	Catalogue Enclosed Yes / No
1.	Water Tank made of Stainless Steel 304 Grade of 5mm		
2.	4" hot dip galvanized MS section sub frame		
3.	Met cones for mounting Water .		
4.	Electronic LED water indicators		
5.	A CE marked to EN 1028-1, EN 1028-2 & EN 1050 Normal Pressure centrifugal Fire Pump of 2250 lpm @ 7 kg/cm2 capacity		
6.	Ultra High Pressure plunger positive displacement type Fire Pump of 150 LPM @ 100 Kg/cm2 capacity		
7.	Fully automatic reciprocating primer		
8.	PTO of suitable ratio for both the pumps		
9.	Manual Foam Proportioning System		
10.	Ultra High Pressure Hose Reels of 60M with high pressure fog gun		
11.	Water – Foam Monitor of Stainless Steel		
12.	All types of gauges used on control panel		
13.	Corrosion free aluminum extrusion profile section framework for rear superstructure (ISO6063T6)		
14.	Piping & valves of SS 304		
15.	Aluminum plain & chequred sheets		
16.	Fully imported arrangement to stow the BA Sets in the recessed back rest with locking & unlocking system		
17.	Dust & water proof, powder coated aluminum rolling shutters made of extruded aluminum sections.		
18.	Heavy Duty Gas filled springs for flap type self closing downward opening doors.		
19.	Battery operated siren		
20.	Search light		
21.	Fully Imported battery operated FLAT LED LIGHTING BAR WITH PROGRAMMABLE FLASH PATTERN and Multi-tone hooters/mike with amplifier, Loud Speaker system		
22.	Paint to be used on exterior paneling		
23.	Aluminum trussed type Double Extension Ladder 10.5 m.		
24.	PVC heavy duty suction hose complete with copper alloy round threaded couplings to suit the pump inlet – 2.5m long.		
25.	Universal type Suction wrenches IS 4643		
26.	Cylindrical gunmetal Suction strainer according to pump inlet,		

	IS:907		
27.	Basket strainer IS:3582.		
28.	Dividing breaching with control arrangement as per IS:5131		
29.	Collecting breaching as per IS 905		
30.	Hose Bandages Rubberized		
31.	Hose Clamps		
32.	Hose Ramp		
33.	Flat file		
34.	Hydrant valve key & bar		
35.	Double female coupling		
36.	SS Short Branch Pipe, IS:903, ISI Marked & DGMS approved.		
37.	Adaptor double female instantaneous pattern 63 mm, IS:901		
38.	Adaptor double male instantaneous pattern 63 mm, IS:901		
39.	Nozzle spanners, IS:903		
40.	SS Fog nozzle with extension applicator with fog head		
41.	SS London pattern Hand Control Branch pipe 63mm		
42.	Universal Branch Pipe		
43.	Branch Pipe with revolving head		
44.	Multipurpose Hand Held Nozzle		
45.	Flow Hand Held Nozzle		
46.	Long line with Manila 50 mm circumference, 30 m long		
47.	Short line with Manila, 50 mm circumference, 15 m long		
48.	First aid box for 10 persons		
49.	Electricians Hand Gloves resistant to 33 KV		
50.	Axe large, IS:703		
51.	Pick Axe		
52.	Crowbars 1 m long IS:704-1968		
53.	Carpenter saw		
54.	Spanner adjustable 30cm long handle		
55.	Tool box with Non sparking D and ring spanner from 10 mm size to 46 mm size		
56.	Hydraulic Jack, 10 Ton		
57.	Non percolating flexible Fire Fighting Delivery Hose 63 mm X 15 meters, bearing IS : 636 -1988 type B & CE marked duly bounded with GM heavy duty Hose coupling, IS 903 mark.		
58.	LEL cum O2 meter.		
59.	Spare wheel for chassis including Rim, tyre & tube.		
60.	Modern Apparel make three layer Fire Suit complete with boots, gloves packed in galvanized case.		

61.	Self contained Air breathing apparatus (SCBA) with steel cylinder of at least 45 min working duration of 6/ltrs/300 bar, duly CE marked to EN 137 & Face mask to EN 136 class 3		

Detail Technical Specifications of Accessories / Equipments

Self Contained Breathing Apparatus (SCBA)

Open Circuit Self Contained Breathing Apparatus Set shall be of 6 Liters WC & 300 bar pressure of working duration of 30 Min. & 15 Min. escape duration. The weight of SCBA with charged air cylinder shall not exceed 10 kg. SCBA shall be CE marked to EN 137 & air cylinder with valves shall have NOC from CCE-Nagpur.

The SCBA shall comprise of following:

- **Carbon composite Back Plate & Kevlar Blended Harnesses & adjustable 100% Kevlar Cylinder Band.**
- Compact & Non-adjustable Pressure Reducer with PRV.
- Compact, automatic positive pressure & first breath actuation; bayonet connection Lung Demand Valve.
- SCBA shall have DIN quick connect connection with Compressed Air Breathing Cylinder Trolley Unit.
- Full Vision Face Mask of EPDM/Silicone rubber with Speech diaphragm, five finger head harness, polycarbonate visor. Facer Mask shall be CE marked to EN 136 Class-3
- Medium & High Pressure Hoses.
- Pressure Gauge of SS with Highly luminous dial, protective cover & safety blowout vent at rear. Both Pressure Gauge & Whistle Unit with swivel joint shall be shoulder mounted.
- Air Cylinder shall be aluminum lined, full wrapped carbon composite cylinder with ratchet type hand wheeled valve shall be of 6 Liters WC 300 bar pressure for total 45 min. duration & shall have NOC from CCE-Nagpur.

The Air Cylinders shall be compatible or interchangeable with Compressed Air Breathing Cylinder Trolley Unit & Self Contained Under Water Breathing Apparatus.

NOMEX 3 Layer Fire Suit:

Fire Proximity Suit made of **DUPONT NOMEX** fabric with coat, pant, gloves, hood, fireman helmet and boots.
Section A: General requirement for Fire Fighting Suit.

1) Complete suit (suit jacket & trouser, helmet, hand glove) shall be supplied by the party. The complete suit shall be suitable for protection against hazards of flash fire/hazard of entrapment (structural fire fighting).
2) The suit shall be CE marked / UL marked. Copies of CE certificates / UL certificates for the complete suit shall be sent along with the offer and supply of suite.
3) One year warrantee against manufacturing defects shall be submitted along with the material.
4) Party shall send operation & maintenance information/manual and import proof along with the material.
5) Party should send a Information literature/catalogue with full details and test reports (if any) of suite Party has to give demonstration of suite at site.

Construction of both Jacket &Trouser :-
Outer layer made of **Nomex Delta T (Tough)** fabric of 200Gms.
Middle layer (Moisture Barrier) made out of **GORE-TEX FIREBLOCKER N** – 135 g/m2.
Inner layer (Thermal Barrier) made from **Nomex Comfort / Aramid Grid,** 200 g/m2.
Nomex threads must have been for stitching the suit & same shall be
Scotchlite/3M flame resistant in lime green/silver reflective tapes must have been used.

DESIGN OF THE JACKET

- The Jacket should be of following design details.
  - Front zipper extending to collar.
  - Strap for closing the collar in front.
  - Retro-reflective tape of not less than 5cm should be provided (a) 2 row should be provided the bottom part of the jacket. (b) 2 vertical trims on front & back of the Jacket. (c) 1 around the lower part of the sleeve around
  - Reinforcement in the elbow area and the bottom of the sleeves made in outer fabric.

- Pocket details are as below.
  - 2 side pockets with flaps and straps.
  - Adjustable radio pocket with flap and strap on left breast.

DESIGN OF THE TROUSER

- The trouser should be of following design details.
  - Should have pre-bent knee with Kevlar reinforcement in the knee area.
  - Retro-reflective tape of not less than 5cm should be provided around the lower parts of legs and vertically up to the knee area.
  - Detachable knee pads.
  - Suit trouser shall be given adequate support provision (elasticized, adjustable braces etc.) so that it shall not slip during use.
  - Suit trouser shall be suitable for use over the boot.

- The pockets should have following details.
  - 2 box pockets with flaps and straps on both trouser legs and knee pad pockets.

<u>APPROVAL</u>
The Jacket & Trouser should be approved to EN 469 Level 2 which should be clearly indicated on the label of the suit & certificate.

Suit is to be approved & CE marked to EN 469 &Shall be available in navy blue colour.

Balaclavas Nomex knitted sock hood made of Nomex Delta C duly CE marked to EN 531.

Nomex Knitted Gloves: Palm of 100% Kevlar & Back of Nomex Delta T, Mid Lining 50% Kevlar & 50% Nomex, PU Membrane, 100% Kevlar lining, wrist cuffs of Nomex Comfort 450 g/m2, exposed part reinforced with waterproof leather, have 3M reflecting strips & spring-hook on the backhand, have excellent protection against cut, heat & penetration of liquids, shall be CE marked to EN 659: 2004, or certified to NFPA 1971:2007. The fireman hand gloves shall provide firm fitting and protection from heat, abrasion, cutting& shall have wristband or suitable closing arrangement for firm hand fitting There shall be an adequate overlap between the hand gloves and suit jacket sleeves for effective heat protection. Two pair fireman hand gloves suitable for palm size 7.5-8 inch approx. & 8-8.5 inch approx. shall be supplied.

Fireman Helmet: Outer shell shall be made of fiberglass, fire red colour, highly chemical resistant & more stable at extreme temperatures, with optically correct faceshield meeting NFPA standards and ANSI Z87.1-1989, with brow pad washable, fire resistant, replaceable & easily removable, ear/neck protector made of NOMEX. Fire Helmet shall be CE marked to EN 443. There shall be an adequate overlap between the helmet and jacket neck collar or suitable equivalent rating flexible add on flap or hood to be provided for protection of neck ears. Helmet shall have adjustable head sizes fitting & adjustable chinstrap

Fire Boot: Heavy-duty slip in made of water repellent vulcanized rubber upper & sole, waterproof & mild chemicals resistant, anatomical moisture absorbent inner sole, Kevlar / Nomex leg lining for heat resistance, steel toe cap, rubber sole with steel insert, anti-static, oil, acid & electric shock resistant and flame retardant, flame retardant Pull on straps & upper compound, CE marked to EN 345 part-II:1996& third party certified for UL, SATRA & CSA. The fireman boots shall have antiskid sole, toe cap. Two pair fireman boots of sizes 9 & 10 (equivalent to Bata shoe sizes) shall be supplied.

SIZE / WEIGHT- LARGE. Suit jackets and trousers shall be supplied in two sizes suitable for persons of height 170 cm and 185 cm(shirt size 40-46 and waist size 30-38 inch)approx. The suit must not weight more than 3-4 kgs.
* Complete Suit has to be completely imported suit and certification of the original supplier shall be submitted in this regard.

Appendix – 1

PRICE SCHEDULE

NIT No: **PU/F&S/MFT/2014/50** Date: 07/11/2014

Bid Document Number: **PU/F&S/MFT/2014/49** Date: 07/11/2014

FABRICATION AND SUPPLY OF MULTIPURPOSE FIRE TENDER

Quantity = **01 Number.**

Sl No	SPECIFICATIONS OF ITEMS	QUANTITY	Rate	Amount
01	**Fabrication/ Manufacturing and supply of Multipurpose Fire Tender to be fabricated on TATA Model LPT 1613/42 Chassis , SS 304 Water Tank having capacity of 4,000 Liters, SS 304 Foam Tank having capacity of 500 Liters, Centrifugal Fire Pump having capacity 2,250 LPM at 7.0 Kg/Cm2(g), PTO having step up ratio of 1:1.27, Automatic Water Ring Type Primer, Indirect cooling System, Round the pump proportioning system, Foam Monitor having capacity of 1,400 LPM at 7.0 Kg/Cm2(g), First Aid hose reel 19 mm x 60 mm long, 75 Kg x 2 Numbers DCP, 4 X 22.5 Co2 Extinguisher. Complete fabrication shall be carried out as per IS:10460**	**01(One) Number**		
02	**Supply of Chassis Model TATA 1613/42 for fabrication of Multipurpose Fire Tender including procurement with to and fro transportation charges from manufacturer or Authorized Dealer of TATA.**	**01(One) Number**		
03	**Schedule of Equipment as per ANNEXURE- VI A**	**01 (One) Set**		

ANNEXURE-VIA

LIST OF EQUIPMENTS & ACCESSORIES TO BE STORED/SUPPLIED ALONG WITH THE MULTIPURPOSE FIRE TENDER

Following Accessories also shall be provided with MULTIPURPOSE FIRE TENDER:

SI.NO.	Description	Qty.	Rate	Amount
1.	A 10.5 meters aluminum trussed type double extension ladder.	1 No.		
2.	PVC suction hose heavy duty complete with copper alloy round threaded couplings to suit the pump inlet – 2.5m long.	4 Nos.		
3.	Universal Suction wrenches for suction coupling	2 Nos.		
4.	Cylindrical GM Suction strainer according to pump inlet, IS:907	1 No.		
5.	Basket strainer suitable for item 4 , IS:3582.	1 No.		
6.	**Dividing breaching with control arrangement as per IS:5131**	2Nos.		
7.	**Collecting breaching as per IS 905**	2 Nos.		
8.	**Hose Bandages Rubberized**	12 Nos.		
9.	**Hose Clamps**	6 Nos.		
10.	**Hose Ramp**	4 Nos		
11.	**Hydrant valve key & bar**	1 Set		
12.	**Double female coupling**	2 No.		
13.	SS Short Branch pipe, IS:903, **ISI Marked.**	4 Nos.		
14.	**Adapter for 100mm suction female screw coupling and 63mm male instantaneous.**	2 Nos.		
15.	**Adaptor double female instantaneous pattern 63 mm, IS:901**	2 Nos.		
16.	**Adaptor double male instantaneous pattern 63 mm, IS:901**	2 Nos.		
17.	Nozzle spanners, IS:903	2 Nos.		
18.	SS Fog nozzle with extension applicator with fog head	2 Nos.		
19.	SS London pattern Hand Control Branch pipe 63mm	1 No.		
20.	Universal Branch Pipe	1 No.		
21.	Branch Pipe with revolving head	1 No.		
22.	Water curtain nozzle	1 No.		
23.	**Multipurpose Hand Held Nozzle** shall be made of light alloy extruded construction conf. To 64430-WP Grade, twist type control for straight jet, spray and wide angle fog, capable to operate efficiently at low pressure 3.5kg/cm2, facility of solid jet and fog	1 No.		

	simultaneously or independently, discharge capacity at 5kg/cm2 pressure more than 500 LPM for jet and 300 LPM for spray, (i.e. combined discharge capacity – 800 LPM and Horizontal Jet throw in still air more than 35 Meters. at 5-6 kg/cm2 pressure, provision for change over to flush without shut-off, superior quality and design of rubber grip, twist shut off from fog to stream, provision of teeth to provide dense fog, Control Lever for ON-OFF Position 63 mm size inlet connection, pistol grip handle for better, hard anodized to prevent from corrosion and wear for better control to fire fighter.			
24.	**Multi Gallon age Hand Held Nozzle** shall be made of Light alloy extruded construction of 64430 – WP Grade, hard anodized black to prevent from corrosion or wear, twist type control for straight jet, spray and wide angle fog, having arrangement for five flow selection from 350 to 900 LPM by twist , horizontal reach Min. 35 Mtrs at 7 Kg/cm2 pressure, Pistol grip type handle for better grip, provision for change over to flush without shut-off, Replaceable spinning teeth ring for fog curtain, Ball valve type handle for shut off, 63 mm size Male instantaneous inlet connection.	1 Nos.		
25.	Long line with Manila 50 mm circumference, 30 m long	2 Nos.		
26.	Short line with Manila, 50 mm circumference, 15 m long	2 Nos.		
27.	First aid box for 10 persons	1 No.		
28.	Electricians Hand Gloves resistant to 33 KV	2 Pairs		
29.	Axe large, IS:703	1 No.		
30.	Pick Axe (IS : 273-1973	2 No.		
31.	Crowbars 1 m long (IS : 704-1968)	1 No.		
32.	Carpenter tool kit, Measure Tap – 2 Nos.(30 ft & 50 ft) Scissor – 1 No. Big Hand Drill- 1 No, Hand saw – 1 No. File Smooth and File Bustard – 1 Set Chisel (Small and big) 1 No. each Right Angle – 1 No.	1 Set		
33.	Spanner adjustable 30cm long handle	1 No.		
34.	Hydraulic Jack, 10 Ton	1 No.		
35.	Grease Gun with 1 kg grease	1 No.		
36.	Water jell blanket of 8'' x 6'' size	2 Nos.		
37.	Face Shields with chin & brow guard with	2 No		

	ratchet head gear			
38.	Tool box with Non sparking D and ring spanner from 10 mm size to 46 mm size . 1hacksawframe 12hacksawblades 2 cold chisels 12.5 mm and 25 mm 1 screw driver- insulated 1 bolt cutter.	1 Set		
39.	Modern Apparel make three layer Fire Suit complete with boots, gloves packed in galvanized case.	1 No.		
40.	Synthetic RRL TYPE-B,UL ListedFire Fighting Delivery Hose 63 mm X 15 mtrs, bearing IS : 636 -1988 type B & CE marked duly bounded with GM heavy duty Hose Male and female coupling, IS 903 mark.	10		
41.	Dragger make portable LEL(Explosive) cum O2 meter with charger and Calibration certificate.	1 no.		
42.	Search light (Heavy duty) with cable length of 20 metres and connections.	**01 nos**		
43.	**Fire Jacket with radium reflective tapes**	**06 nos**		
44.	**Spare wheel for chassis including Rim, tyre & tube.**	**01Nos**		
45.	**Self contained Air breathing apparatus (SCBA) with steel cylinder of at least 45 min working duration of 6/liters/300 bar, duly CE marked to EN 137 & Face mask to EN 136cl3 & cylinder & valve shall have NOC from CCE-Nagpur**	**02 sets.**		

ANNEXURE-1A

UNIT PRICE SCHEDULE: (IN INDIAN RUPEES ONLY)

Sl no	Particulars	IN FIGURES	IN WORDS
1	Ex. Factory price of the complete package of Multipurpose Fire Tender		
2	Packing and Forwarding charges, if any, including loading / unloading charges		
3	i) Excise duty@.....% on ……..		
	ii) Education Cess@.....% on…..		
4	Sales Tax@.....%against C Form on……..		
5	Transportation Charge up to AGCL at Duliajan		
6	Transit Insurance, if any		
7	Any other levis or charges not stated above		
09	Total Landed Cost at Duliajan		

If required, Tendered may indicate further breakdown prices according to various taxes and duties of the items offered.

Signature of Bidder with seal

EXPERIENCE LIST

The Bidder shall tabulate below a list of his experience as regards to the supply of Multipurpose Fire Tender indicating as much details as possible, name of Client, year of execution and cost and other information. Bidder shall follow this format and shall be included in the Bid Evaluation Criteria part.

NAME OF CLIENT	P.O. NO & DATE	MULTIPURPOSE FIRE TENDER MODEL	QUANTITY ORDERED FOR	QUANTITY SUPPLIED	MULTIPURPOSE FIRE TENDER SUPPLIED	REMARKS

					WITH DATE OF SUPPLY	

SEAL OF THE COMPANY

Signature : .....

Name : .....

Designation : .....

DECLARATION LIST

I/We, ... Certify that all the above submitted data and information pertaining to this proposal are correct and are true representation of the offer covered by our formal Proposal No. ..... dated..... Against your Tender No ……..Date : ……

I/We, hereby certify that I/We am/are duly authorised representative/s of the Bidder whose name/s appears above my/our Signature.

Bidder's Name : .....

Authorised Representative's Signature/s : .....

Authorised Representative's Name/s : .....

Bidder's Intent : The Bidder hereby agrees fully to comply with the requirements and intent of this specification.

Authorised Representative's Signature/s : .....

SEAL OF THE COMPANY Signature/s : .....

Name/s : .....

Designation/s : .....

BID COMPLIANCE STATEMENT for all Tender Clauses

Sl No	TENDER CLAUSE NO	TENDER SPECIFICATIONS	CLAUSEWISE / POINTWISE OFFERED SPECIFICATIONS	SUPPORTING DOCUMENTS IN ANNEXURE

SEAL OF THE COMPANY Signature/s : .....

Name/s : .....

Designation/s : .....

Annexure-III

CHECK LIST

THE CHECK LIST MUST BE COMPLETED AND RETURNED WITH YOUR OFFER. PLEASE ENSURE THAT ALL THESE POINTS ARE COVERED IN YOUR OFFER. THESE WILL ENSURE THAT YOUR OFFER IS PROPERLY EVALUATED. PLEASE TICK MARK 'YES' OR 'NO' TO THE FOLLOWING QUESTIONS, IN THE RIGHT HAND COLUMN.

(A) TECHNICAL CHECK LIST

1	Whether quoted as leading manufacturers, of all types of Fire Tenders and whether documentary evidence submitted?	YES/NO
2	Whether quoted as Authorized Dealer and whether documentary evidences submitted?	YES/NO
3	Whether quoted as Assembler , manufacturer or authorized dealer?	YES/NO
4	Whether separately highlighted any deviation from the technical specification?	YES/NO
	Whether detail specification with manufacturer's technical	YES/NO

5	literature/catalogue enclosed?	
6	Whether test certificate of all equipments will be submitted?	YES/NO
7	Whether required spare parts shall be supplied? at least 5 (five) years after expiry of warranty period.	YES/NO
8	Whether THREE sets Maintenance Manual shall be submitted?	YES/NO
9	Whether bill of Materials will be submitted?	YES/NO
10	Whether confirmed that control panel drawing shall be approved by AGCL before manufacturing in the event of placement of order?	YES/NO
11	Whether offered Multipurpose Fire Tender is as per NIT ?	YES/NO
12	Whether quoted Multipurpose Fire Tender for fabrication, testing and supply & delivery at Customer's premises?	YES/NO

Signature _____
Name _____
Designation _____

ANNEXURE III

(B) COMMERCIAL CHECK LIST

THE CHECK LIST MUST BE COMPLETED AND RETURNED WITH YOUR OFFER. PLEASE ENSURE THAT ALL THESE POINTS ARE COVERED IN YOUR OFFER. THESE WILL ENSURE THAT YOUR OFFER IS PROPERLY EVALUATED. PLEASE SELECT "Yes" OR "No" TO THE FOLLOWING QUESTIONS, IN THE RIGHT HAND COLUMN.

1.0	Whether bid submitted under Single Stage Two Bid System?	YES/NO
2.0	Whether quoted as leading manufacturers, of all types of Fire Tenders?	YES/NO
2.1	Whether quoted as Supply House/Distributor? To specify	YES/NO
2.2.1	If quoted as Supply House / Distributor Whether submitted valid and proper authorization letter from	YES/NO

	Manufacturer confirming that bidder is their authorized Supply House for the product offered?	
2.2.2	Whether manufacturer's back up Warranty /Guarantee certificate submitted?	YES/NO
3.0	Whether ORIGINAL Bank Guarantee sent separately?	YES/NO
	If YES, provide details (a) Amount: (b) Name of Issuing Bank: (c) Validity of Bank Guarantee.:	YES/NO
3.1	Whether offered firm prices?	YES/NO
3.2	Whether agreed to the NIT Warranty clause?	YES/NO
3.3	Whether confirmed acceptance of tender Payment Terms?	YES/NO
3.4	Whether Price submitted as per Price Schedule?	YES/NO
3.5	Whether confirmed that all required spare parts shall be supplied at least 5 (five) years after expiry of warranty period?.	YES/NO
3.6	Whether quoted as per NIT (without any deviations)?	YES/NO
3.7	Whether quoted any deviation?	YES/NO
3.8	Whether deviation separately highlighted?	YES/NO
3.9	Whether indicated the country of origin for the items quoted?	YES/NO
3.9.1	Whether technical literature / catalogue enclosed?	YES/NO
3.9.2	Whether weight & volume of items offered indicated?	YES/NO

Annexure- III

PROFORMA FOR BANK GUARANTEE FOR EARNEST MONEY DEPOSIT/BID SECURITY

(To be stamped in accordance with the Stamp Act)

Bank Guarantee no…….. Date :

To
Assam Gas Company Limited,
P.O.Duliajan
Dist: Dibrugarh
Assam:786602

Dear Sir(s)
In accordance with letter inviting Tender under your Tender No……..
M/S ……...having their Registered / Head Office at…….
(hereinafter called the Bidder) wish to participate in the said tender for Fabrication and Supply, Multipurpose Fire Tender. As an irrevocable Bank Guarantee against Earnest

Money for the amount of Rs ---------- (Rupees ---------- only) is required to be submitted by the Bidder as a condition precedent for participation in the said tender which amount is liable to be forfeited on the happening of any contingencies in mentioned in the Tender Document.

We, the …… Bank at …… ….. having our Head Office …… … … … … … … … … ……..
(Local Address) guarantee and undertake to pay immediately on demand without any recourse to the Bidder by Assam Gas Company Limited, the amount ……. without any reservation, protest, demur and recourse. Any such demand made by Assam Gas Company Limited, shall be conclusive and binding on us irrespective of any dispute or difference raised by the Bidder.

This guarantee shall be irrevocable and shall remain valid up to / / 2014. If any further extension of this guarantee is required, the same shall be extended to such required period on receiving instructions from
M/S …… …… …… …… ……whose behalf this guarantee is issued.

In witness whereof the Bank , though its authorized officer, has set its hand and stamp on this ……day of ……2013 at …… ……

Witness

Signature
Name

Signature
Name

OFFICIAL ADDRESS

Designation with Bank Stamp
Attorney as per power of Attorney No.

INSTRUCTIONS FOR FURNISHING BID-GUARANTEE

BANK GUARANTEE

a) The Bank Guarantee by bidders will be given on non-judicial stamp paper as per stamp duly applicable. The non-judicial stamp paper should be in the name of the issuing bank. In case of foreign bank, the said bank guarantees to be issued by its correspondent bank in India on requisite non-judicial stamp paper.

b) A letter from the issuing bank of the requisite Bank guarantee confirming that said bank guarantee / all future communication relating to the Bank Guarantee shall be forwarded

to the purchaser.

c) Bidders must indicate the full postal address of the bank along with the bank's E-mail / Fax from where the earnest Money bond has been issued.

Annexure-IV

PROFORMA OF BANK GUARANTEE FOR CONTRACT PERFORMANCE GUARANTEE
(ON NON – JUDICIAL PAPER OF APPROPRIATE VALUE)

To,
Assam Gas Company Limited,

P.O. Duliajan
Dist: Dibrugarh
Assam: 786602

Dear Sir (s),

M/s…… have been awarded the work of
…….
For Assam Gas Company Limited, P.O. Duliajan, Dist. Dibrugarh , Assam – 786602.

The Contracts conditions provide that the CONTRACTOR shall pay a sum of…….
(as full Contract Performance Guarantee in the Form therein mentioned. The form of payment of Contract Performance Guarantee includes guarantee executed by nationalized bank, undertaking full responsibility to indemnify Assam Gas Company Limited, in case of default.

The said ……has approached us and at their request and in consideration of the premises we having our office at…….
Have agreed to give such guarantee as hereinafter mentioned.

1.
We…….. here by undertake and agree with you that if default shall be made by M/s…….
…….. in performing any of the terms and conditions of the tender or in payment of any money payable to Assam Gas Company Limited, We shall on demand pay without any recourse to the contractor to you in such manner as you may direct the

said amount of ……only or such portion thereof not exceeding the said sum as you may from time to time require.

2. You will have the full liberty without reference to us and without affecting this guarantee, postpone for any time or from time to time the exercise of any of the power and rights conferred on you under the contract with the said ……and to enforce or to forbear from endorsing any powers or rights or by reason of time being given to the said……. which under law relating to the sureties would but for provision have the effect of releasing us.

3. Your right to recover the said sum of ….(……..) from us in manner aforesaid will not be affected or suspended by reason of the fact that any dispute or disputes have been raised by the said M/s……and / or that any dispute or disputes are pending before any officer, tribunal or court.

4. The guarantee herein contained shall not be determined affected by the liquidation or winding up dissolution or changes of constitution or insolvency of the said but shall in all respects and for all purposed be binding and operative until payment of all money due to you in respect of such liabilities is paid.

6. This guarantee shall be irrevocable and shall remain valid up to …… (The date should be after 2 months after the successful commissioning date), if any further extension of this guarantee is required, the same shall be extended to such require period on receiving instruction from M/s……..on whose behalf this guarantee is issued.

7. The Bank Guarantees payment of an amount is payable on demand and in any case within 48 hours of the presentation of the letter or invocation of Bank Guarantee should the banker fail to release payment on demand , penal interest of 18% per annum shall become payable immediately and any dispute arising our of or in relation to the said Bank Guarantee shall be subject to the jurisdiction of Dibrugarh Courts.

8, We have power to issue this guarantee in your favour under Memorandum and Article of Association and the undersigned has full power to do under the power of Attorney dated…… granted to him by the Bank.

Yours faithfully,

…… Bank

By its Constituted Attorney

Signature of a person duly authorized
to Sign on behalf of the bank