



Bid Number/बोली क्रमांक (बिड संख्या):
GEM/2024/B/5594566
Dated/दिनांक : 23-11-2024

Bid Document/ बिड दस्तावेज़

Bid Details/बिड विवरण	
Bid End Date/Time/बिड बंद होने की तारीख/समय	23-12-2024 14:00:00
Bid Opening Date/Time/बिड खुलने की तारीख/समय	23-12-2024 14:30:00
Bid Offer Validity (From End Date)/बिड पेशकश वैधता (बंद होने की तारीख से)	120 (Days)
Ministry/State Name/मंत्रालय/राज्य का नाम	Ministry Of Finance
Department Name/विभाग का नाम	Department Of Economic Affairs
Organisation Name/संगठन का नाम	Security Printing And Minting Corporation Of India Limited (spmci)
Office Name/कार्यालय का नाम	Janpath
Total Quantity/कुल मात्रा	1
Item Category/मद केटेगरी	Fire Hydrant System
GeMARPTS में खोजी गई स्ट्रिंग / Searched Strings used in GeMARPTS	Fire Hydrant System
GeMARPTS में खोजा गया परिणाम / Searched Result generated in GeMARPTS	Double Headed Fire Hydrant Stand Post, Portable Fire Extinguishers (V2) as per IS 15683:2018, PLC based fire alarm system, Hydrants (Landing Valve) as per IS 5290, Fixed Aerosol Fire - Extinguishing System, Potable Water Purification System with Inbuilt Water Cooler, Light Portable Fire Monitor (V2), Standalone Ceiling Mounted Fire Suppression System, RO Water Treatment System Above 50 LPH Filtration Capacity, Fixed Clean Agent Gas based Fire Suppression System
अधिसूचना के लिए चयनित प्रासंगिक श्रेणियाँ / Relevant Categories selected for notification	<ul style="list-style-type: none">• PLC based fire alarm system• Fire Hose Cabinet• Fire Fighting and Hydraulic Rescue Platform (V3)
Minimum Average Annual Turnover of the bidder (For 3 Years)/बिडर का न्यूनतम औसत वार्षिक टर्नओवर (3 वर्षों का)	65 Lakh (s)
MSE Exemption for Years Of Experience/अनुभव के वर्षों से एमएसई छूट/ and Turnover/टर्नओवर के लिए एमएसई को छूट प्राप्त है	Yes

Bid Details/बिड विवरण	
Startup Exemption for Years Of Experience/अनुभव के वर्षों से स्टार्टअप छूट/ and Turnover/ टर्नओवर के लिए स्टार्टअप को छूट प्राप्त है	Yes
Document required from seller/विक्रेता से मांगे गए दस्तावेज़	Experience Criteria,Past Performance,Bidder Turnover,Certificate (Requested in ATC),Additional Doc 1 (Requested in ATC) *In case any bidder is seeking exemption from Experience / Turnover Criteria, the supporting documents to prove his eligibility for exemption must be uploaded for evaluation by the buyer
Do you want to show documents uploaded by bidders to all bidders participated in bid?/	No
Past Performance/विगत प्रदर्शन	40 %
Bid to RA enabled/बिड से रिवर्स नीलामी सक्रिय किया	No
Type of Bid/बिड का प्रकार	Two Packet Bid
Time allowed for Technical Clarifications during technical evaluation/तकनीकी मूल्यांकन के दौरान तकनीकी स्पष्टीकरण हेतु अनुमत समय	2 Days
Inspection Required (By Empanelled Inspection Authority / Agencies pre-registered with GeM)	No
Evaluation Method/मूल्यांकन पद्धति	Total value wise evaluation
Arbitration Clause	No
Mediation Clause	No

EMD Detail/ईएमडी विवरण

Advisory Bank/एडवाइजरी बैंक	Indusind bank
EMD Amount/ईएमडी राशि	500000

ePBG Detail/ईपीबीजी विवरण

Advisory Bank/एडवाइजरी बैंक	Indusind bank
ePBG Percentage(%) /ईपीबीजी प्रतिशत (%)	5.00
Duration of ePBG required (Months)/ईपीबीजी की अपेक्षित अवधि (महीने).	20

(a). EMD EXEMPTION: The bidder seeking EMD exemption, must submit the valid supporting document for the relevant category as per GeM GTC with the bid. Under MSE category, only manufacturers for goods and Service

Providers for Services are eligible for exemption from EMD. Traders are excluded from the purview of this Policy./जेम की शर्तों के अनुसार ईएमडी छूट के इच्छुक बिडर को संबंधित केटेगरी के लिए बिड के साथ वैध समर्थित दस्तावेज़ प्रस्तुत करने है। एमएसई केटेगरी के अंतर्गत केवल वस्तुओं के लिए विनिर्माता तथा सेवाओं के लिए सेवा प्रदाता ईएमडी से छूट के पात्र हैं। व्यापारियों को इस नीति के दायरे से बाहर रखा गया है।

(b). EMD & Performance security should be in favour of Beneficiary, wherever it is applicable./ईएमडी और संपादन जमानत राशि, जहां यह लागू होती है, लाभार्थी के पक्ष में होनी चाहिए।

Beneficiary/लाभार्थी :

Chief General Manager

P.B. NO: 10,IDA PHASE-II, CHERLAPALLY, HYDERABAD-500051, TELANGANA

(India Government Mint, Hyderabad)

MII Purchase Preference/एमआईआई खरीद वरीयता

MII Purchase Preference/एमआईआई खरीद वरीयता	Yes
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MSE Purchase Preference/एमएसई खरीद वरीयता

MSE Purchase Preference/एमएसई खरीद वरीयता	Yes
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1. If the bidder is a Micro or Small Enterprise as per latest definitions under MSME rules, the bidder shall be exempted from the requirement of "Bidder Turnover" criteria and "Experience Criteria" subject to meeting of quality and technical specifications. If the bidder is OEM of the offered products, it would be exempted from the "OEM Average Turnover" criteria also subject to meeting of quality and technical specifications. In case any bidder is seeking exemption from Turnover / Experience Criteria, the supporting documents to prove his eligibility for exemption must be uploaded for evaluation by the buyer.
2. If the bidder is a Startup, the bidder shall be exempted from the requirement of "Bidder Turnover" criteria and "Experience Criteria" subject to their meeting of quality and technical specifications. If the bidder is OEM of the offered products, it would be exempted from the "OEM Average Turnover" criteria also subject to meeting of quality and technical specifications. In case any bidder is seeking exemption from Turnover / Experience Criteria, the supporting documents to prove his eligibility for exemption must be uploaded for evaluation by the buyer.
3. The minimum average annual financial turnover of the bidder during the last three years, ending on 31st March of the previous financial year, should be as indicated above in the bid document. Documentary evidence in the form of certified Audited Balance Sheets of relevant periods or a certificate from the Chartered Accountant / Cost Accountant indicating the turnover details for the relevant period shall be uploaded with the bid. In case the date of constitution / incorporation of the bidder is less than 3-year-old, the average turnover in respect of the completed financial years after the date of constitution shall be taken into account for this criteria.
4. Preference to Make In India products (For bids < 200 Crore):Preference shall be given to Class 1 local supplier as defined in public procurement (Preference to Make in India), Order 2017 as amended from time to time and its subsequent Orders/Notifications issued by concerned Nodal Ministry for specific Goods/Products. The minimum local content to qualify as a Class 1 local supplier is denoted in the bid document. If the bidder wants to avail the Purchase preference, the bidder must upload a certificate from the OEM regarding the percentage of the local content and the details of locations at which the local value addition is made along with their bid, failing which no purchase preference shall be granted. In case the bid value is more than Rs 10 Crore, the declaration relating to percentage of local content shall be certified by the statutory auditor or cost auditor, if the OEM is a company and by a practicing cost accountant or a chartered accountant for OEMs other than companies as per the Public Procurement (preference to Make-in -India) order 2017 dated 04.06.2020. Only Class-I and Class-II Local suppliers as per MII order dated 4.6.2020 will be eligible to bid. Non - Local suppliers as per MII order dated 04.06.2020 are not eligible to participate. However, eligible micro and small enterprises will be allowed to participate .The buyers are advised to refer the OM No.F.1/4/2021-PPD dated 18.05.2023. [OM_No.1_4_2021_PPD_dated_18.05.2023](#) for compliance of Concurrent application of Public Procurement Policy for Micro and Small Enterprises Order, 2012 and Public Procurement (Preference to Make in India) Order, 2017.
5. Purchase preference will be given to MSEs having valid Udyam Registration and whose credentials are validated online through Udyam Registration portal as defined in Public Procurement Policy for Micro and Small

Enterprises (MSEs) Order, 2012 dated 23.03.2012 issued by Ministry of Micro, Small and Medium Enterprises and its subsequent Orders/Notifications issued by concerned Ministry. If the bidder wants to avail themselves of the Purchase preference, the bidder must be the manufacturer / OEM of the offered product on GeM. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises and hence resellers offering products manufactured by some other OEM are not eligible for any purchase preference. In respect of bid for Services, the bidder must be the Service provider of the offered Service. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product or service and Buyer will decide eligibility for purchase preference based on documentary evidence submitted, while evaluating the bid. If L-1 is not an MSE and MSE Seller (s) has / have quoted price within L-1+ 15% (Selected by Buyer) of margin of purchase preference /price band defined in relevant policy, such MSE Seller shall be given opportunity to match L-1 price and contract will be awarded for 25% (selected by Buyer) percentage of total quantity. The buyers are advised to refer the OM No. F.1/4/2021-PPD dated 18.05.2023 [OM No.1 4 2021 PPD dated 18.05.2023](#) for compliance of Concurrent application of Public Procurement Policy for Micro and Small Enterprises Order, 2012 and Public Procurement (Preference to Make in India) Order, 2017. Benefits of MSE will be allowed only if seller is validated on-line in GeM profile as well as validated and approved by Buyer after evaluation of documents submitted.

6. Past Performance: The Bidder or its OEM {themselves or through re-seller(s)} should have supplied same or similar Category Products for 40% of bid quantity, in at least one of the last three Financial years before the bid opening date to any Central / State Govt Organization / PSU. Copies of relevant contracts (proving supply of cumulative order quantity in any one financial year) to be submitted along with bid in support of quantity supplied in the relevant Financial year. In case of bunch bids, the category related to primary product having highest bid value should meet this criterion.

Excel Upload Required/एक्सेल में अपलोड किए जाने की आवश्यकता :

Price Bid Format - [1731390344.xlsx](#)

Pre Bid Detail(s)

Pre-Bid Date and Time	Pre-Bid Venue
07-12-2024 15:00:00	India Government Mint, Hyderabad(A Unit of SPMCIL), P.B. NO: 10,IDA PHASE-II, CHERLAPALLY, HYDERABAD-500051, TELANGANA E-Mail: purchase.igmh@spmcil.com; Phone: 040-27268352, 27268367, 040-27268300 (Ext. 122/117) Note: The Bidder(s) or his Official representative who will participate in bidding process are invited to attend Pre-Bid Conference Meeting which will take place on the date specified in Bid document. Bidder(s) queries if any must reach to India Government Mint, Hyderabad at least 2 days prior to Pre Bid Meeting date to the E-Mail ID provided in GeM bid document. The Bidder(s) or his Official representative who will participate in bidding process are requested to send the details of the Persons attending along with ID Proofs against the GeM bid to the above mentioned E-mail Id at least 2 days prior to the date of the Pre Bid Interaction date for making necessary Gate Pass arrangements.

Fire Hydrant System (1 pieces)

(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively/क्रमशः श्रेणी 1 और श्रेणी 2 के स्थानीय आपूर्तिकर्ता के रूप में अर्हता प्राप्त करने के लिए आवश्यक)

Technical Specifications/तकनीकी विशिष्टियाँ

Buyer Specification Document/क्रेता विशिष्टि दस्तावेज़	Download
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Consignees/Reporting Officer/परेषिती/रिपोर्टिंग अधिकारी and/ तथा Quantity/मात्रा

S.No./क्र. सं.	Consignee Reporting/Officer/ परेषिती/रिपोर्टिंग अधिकारी	Address/पता	Quantity/मात्रा	Delivery Days/डिलीवरी के दिन
1	Gaurav Singh	500051,India Govt Mint, IDA, Phase-II Cherapally, (R.R district) Hyderabad , Telangana	1	180

Buyer added Bid Specific Additional Scope of Work

S.No.क्र.सं.	Document Title	Description	Applicable/रिवर्स प्रभार के अनुसार जीएसटी i.r.o. Items
1	Scope of Work along with all the technical Specificaiton View	Supply, Installation, Commissioning and Testing of Fire Hydrant System on Turn-Key Basis Project	Fire Hydrant System(1)

The uploaded document only contains Buyer specific Additional Scope of Work and / or Drawings for the bid items added with due approval of Buyer's competent authority. Buyer has certified that these additional scope and drawings are generalized and would not lead to any restrictive bidding.

Buyer Added Bid Specific Terms and Conditions/क्रेता द्वारा जोड़ी गई बिड की विशेष शर्तें**1. Generic**

Bidders shall quote only those products (Part of Service delivery) in the bid which are not obsolete in the market and has at least 7 years residual market life i.e. the offered product shall not be declared end-of-life by the OEM before this period.

2. Generic

Bidders are advised to check applicable GST on their own before quoting. Buyer will not take any responsibility in this regards. GST reimbursement will be as per actuals or as per applicable rates (whichever is lower), subject to the maximum of quoted GST %.

3. Generic

Data Sheet of the product(s) offered in the bid, are to be uploaded along with the bid documents. Buyers can match and verify the Data Sheet with the product specifications offered. In case of any unexplained mismatch of technical parameters, the bid is liable for rejection.

4. Generic

Installation, Commissioning, Testing, Configuration, Training (if any - which ever is applicable as per scope of supply) is to be carried out by OEM / OEM Certified resource or OEM authorised Reseller.

5. Generic

OPTIONAL SITE VISIT:

1. The Bidder is advised to visit and examine the installation site and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the Bid. The costs of visiting the site shall be borne by the Bidder.

The cost of Visiting the IGMH Premises shall be in the scope of Bidder

2. The Bidder representative shall be allowed entry upon consignee premises for such visits, only upon the express conditions that the Bidder will release and indemnify the Buyer and Consignee against all liabilities arising out of such visit including death or injury, loss or damage to property, and any other loss, damage, costs, and expenses incurred as a result of such visit.

3. The Bidder shall not be entitled to hold any claim against Buyer for noncompliance due to lack of any kind of pre-requisite information as it is the sole responsibility of the Bidder to obtain all the necessary information with regard to site, surrounding, working conditions, weather etc. on its own before submission of the bid.

6. **Generic**

Supplier shall ensure that the Invoice is raised in the name of Consignee with GSTIN of Consignee only.

7. **Generic**

1. The Seller shall not assign the Contract in whole or part without obtaining the prior written consent of buyer.

2. The Seller shall not sub-contract the Contract in whole or part to any entity without obtaining the prior written consent of buyer.

3. The Seller shall, notwithstanding the consent and assignment/sub-contract, remain jointly and severally liable and responsible to buyer together with the assignee/ sub-contractor, for and in respect of the due performance of the Contract and the Sellers obligations there under.

8. **Generic**

Without prejudice to Buyer's right to price adjustment by way of discount or any other right or remedy available to Buyer, Buyer may terminate the Contract or any part thereof by a written notice to the Seller, if:

i) The Seller fails to comply with any material term of the Contract.

ii) The Seller informs Buyer of its inability to deliver the Material(s) or any part thereof within the stipulated Delivery Period or such inability otherwise becomes apparent.

iii) The Seller fails to deliver the Material(s) or any part thereof within the stipulated Delivery Period and/or to replace/rectify any rejected or defective Material(s) promptly.

iv) The Seller becomes bankrupt or goes into liquidation.

v) The Seller makes a general assignment for the benefit of creditors.

vi) A receiver is appointed for any substantial property owned by the Seller.

vii) The Seller has misrepresented to Buyer, acting on which misrepresentation Buyer has placed the Purchase Order on the Seller.

9. **Generic**

While generating invoice in GeM portal, the seller must upload scanned copy of GST invoice and the screenshot of GST portal confirming payment of GST.

10. **Scope of Supply**

Scope of supply (Bid price to include all cost components) : Supply Installation Testing Commissioning of Goods and Training of operators and providing Statutory Clearances required (if any)

11. **Certificates**

Bidder's offer is liable to be rejected if they don't upload any of the certificates / documents sought in the Bid document, ATC and Corrigendum if any.

12. **Warranty**

Warranty period of the supplied products shall be as given in specifications from the date of final

acceptance of goods or after completion of installation, commissioning & testing of goods (if included in the scope of supply), at consignee location. OEM Warranty certificates must be submitted by Successful Bidder at the time of delivery of Goods. The seller should guarantee the rectification of goods in case of any break down during the guarantee period. Seller should have well established Installation, Commissioning, Training, Troubleshooting and Maintenance Service group in INDIA for attending the after sales service. Details of Service Centres near consignee destinations are to be uploaded along with the bid.

13. **Past Project Experience**

Proof for Past Experience and Project Experience clause: For fulfilling the experience criteria any one of the following documents may be considered as valid proof for meeting the experience criteria:a. Contract copy along with Invoice(s) with self-certification by the bidder that service/supplies against the invoices have been executed.b. Execution certificate by client with contract value.c. Any other document in support of contract execution like Third Party Inspection release note, etc.**Proof for Past Experience and Project Experience clause:** For fulfilling the experience criteria any one of the following documents may be considered as valid proof for meeting the experience criteria:a. Contract copy along with Invoice(s) with self-certification by the bidder that service/supplies against the invoices have been executed.b. Execution certificate by client with contract value.c. Any other document in support of contract execution like Third Party Inspection release note, etc.

14. **Forms of EMD and PBG**

Bidders can also submit the EMD with Account Payee Demand Draft in favour of

India Government Mint, Hyderabad(A Unit of SPMCIL)
payable at
Hyderabad

.
Bidder has to upload scanned copy / proof of the DD along with bid and has to ensure delivery of hardcopy to the Buyer within 5 days of Bid End date / Bid Opening date.

15. **Forms of EMD and PBG**

Bidders can also submit the EMD with Banker's Cheque in favour of

India Government Mint, Hyderabad(A Unit of SPMCIL)
payable at
Hyderabad

.
Bidder has to upload scanned copy / proof of the BC along with bid and has to ensure delivery of hardcopy to the Buyer within 5 days of Bid End date / Bid Opening date.

16. **Forms of EMD and PBG**

Bidders can also submit the EMD with Payment online through RTGS / internet banking in Beneficiary name

INDIA GOVERNMENT MINT (A UNIT OF SPMCIL) -COLLECTION A/C
Account No.
201003484303
IFSC Code
INDB0000004
Bank Name
INDUSIND BANK
Branch address
0004 - HYDERABAD

.
Bidder to indicate bid number and name of bidding entity in the transaction details field at the time of on-line transfer. Bidder has to upload scanned copy / proof of the Online Payment Transfer along with bid.

17. **Forms of EMD and PBG**

Successful Bidder can submit the Performance Security in the form of Account Payee Demand Draft also

(besides PBG which is allowed as per GeM GTC). DD should be made in favour of

India Government Mint, Hyderabad(A Unit of SPMCIL)
payable at
Hyderabad

. After award of contract, Successful Bidder can upload scanned copy of the DD in place of PBG and has to ensure delivery of hard copy to the original DD to the Buyer within 15 days of award of contract.

18. **Forms of EMD and PBG**

Successful Bidder can submit the Performance Security in the form of Fixed Deposit Receipt also (besides PBG which is allowed as per GeM GTC). FDR should be made out or pledged in the name of

India Government Mint, Hyderabad(A Unit of SPMCIL)
A/C (Name of the Seller). The bank should certify on it that the deposit can be withdrawn only on the demand or with the sanction of the pledgee. For release of Security Deposit, the FDR will be released in favour of bidder by the Buyer after making endorsement on the back of the FDR duly signed and stamped along with covering letter. Successful Bidder has to upload scanned copy of the FDR document in place of PBG and has to ensure delivery of hard copy of Original FDR to the Buyer within 15 days of award of contract.

19. **Forms of EMD and PBG**

Successful Bidder can submit the Performance Security in the form of Payment online through RTGS / internet banking also (besides PBG which is allowed as per GeM GTC). On-line payment shall be in Beneficiary name

INDIA GOVERNMENT MINT (A UNIT OF SPMCIL) -COLLECTION A/C
Account No.
201003484303
IFSC Code
INDB0000004
Bank Name
INDUSIND BANK
Branch address
0004 - HYDERABAD

. Successful Bidder to indicate Contract number and name of Seller entity in the transaction details field at the time of on-line transfer. Bidder has to upload scanned copy / proof of the Online Payment Transfer in place of PBG within 15 days of award of contract.

20. **Buyer Added Bid Specific ATC**

Buyer Added text based ATC clauses

Supply, Installation, Testing, Commissioning of Fire Hydrant System on Turn-key basis project details:-

GENERAL:-

SITC Internal Fire Hydrant System on Turn-key basis:

1.0 Scope of work:-

- 1.1.** The scope of work in this subhead shall consist of providing all materials, equipment, appliances necessary and required labour to completely do all work relating to the supply, installation, testing & commissioning of Fire Hydrant System as described herein after and shown on the drawings on Turnkey Basis. Entire fire hydrant system, piping, should be made above the ground level (2feet above) as per IS 3844: 1989 (Reaffirmed 2000). The scope of work in general shall include the following.

- i) Fire Fighting Pumps & Accessories and related electrical works. The controller is built in accordance with the latest edition of the EN-12845 Standard, and also based on the National Fire Protection Association standard for the Installation of Centrifugal Fire Pumps, **NFPA 25 uses NFPA No.20** standard for the installation of stationary pumps for fire protection. (Centrifugal Fire Pumps 2013 Edition) or NFPA Standards (Latest Edition) and as per IS 15301: 2003.
- ii) Internal Fire Hydrant System above the ground
- iii) Tentative requirement:

Sl. No	Description	UoM	Qty	Make, Model No map& IS/NFPA Standards
1	<p>Supply of Electric driven Fire pump (Hydrant) suitable for automatic operation and consisting of following: complete in all respect as required.</p> <p>a) Horizontal, centrifugal, end suction pump to ensure a minimum pressure of 3.5 kg/sq.cm. At highest and farthest outlet at specified flow of 2850 Lpm at 90 m.Head conforming to IS standards.</p> <p>b) Casing - CI, Impeller-Bronze, Shaft - SS 410, Mechanical seal.</p> <p>c) Squirrel cage IE-2 induction motor with suitable HP with synchronous speed 2970 RPM, Suitable for operation on 415 volts, 3 phase 50 Hz. AC with IP 55 protection for enclosure, horizontal foot mounted type with Class-F insulation, Conforming to IS standards.</p> <p>d) Common Base plat for Pump and motor and coupling, coupling guard, rubber bellows, anti-vibration arrangement, cables & other accessories as required for complete Installation of pump set.</p> <p>e) Suitable cement concrete foundation with cement concrete plaster complete with anti-vibration arrangement.</p> <p>Standard: IS 15301:2003, NFPA 20 & 25 2013 Edition.</p> <p>Make: KIRLOSKAR/ MATHER & PLATT/ MOTORS: SIEMENS /ABB/ KIRLOSKAR or Equivalent</p>	SETS	2	

Supply of **Diesel Engine driven fire pump** (Standby Pump) suitable for automatic operation and consisting of following: complete in all respects as required.

a) Horizontal, centrifugal, end suction pump to ensure a minimum pressure of 3.5 kg / sq.cm. at highest and farthest outlet at specified flow of 2850 lpm at 90 m. head conforming to IS standards.

b) Casing - CI, Impeller-Bronze, Shaft - SS 410, Mechanical seal

c) Diesel Engine with suitable HP with synchronous speed 2300 RPM, diesel tank, battery with 10 consecutive starts without recharging with cold engine & battery charger, exhaust pipe with insulation, GI cladding with bird screen cowl & up to 15mtrs length, supports with all required accessories.

d) Common Base plate for Pump and motor and coupling, coupling guard, rubber bellows, anti-vibration arrangement, cables & other accessories as required for complete Installation of pump set.

e) Suitable cement concrete foundation with cement concrete plaster complete with anti-vibration arrangement.

Standard: IS 15301:2003, NFPA 20 & 25 2013 Edition.

Make: KIRLOSKAR / MATHER & PLATT MOTORS: SIEMENS/ ABB/ KIRLOSKAR or Equivalent

2

SETS

1

Supply of **Electric driven pressurization pump** suitable for automatic operation and consisting of following: complete in all respect as required.

a) Vertical inline pump to ensure a minimum pressure of 3.5 kg / sq.cm. at highest and farthest outlet at specified flow of 250 lpm at 90 m. head conforming to IS standards.

b) Casing - SS 304, Impeller-SS 304, Shaft- SS 304, Mechanical seal

c) Squirrel cage IE-2 induction motor with suitable HP with synchronous speed 2900 RPM, Suitable for operation on 415 volts, 3 phase 50 Hz. A C with IP 55 protection for enclosure, horizontal foot mounted type with Class-F insulation, Conforming to IS standards.

d) Common Base plate for Pump and motor and coupling, coupling guard and other accessories as required for complete installation of pump set.

e) Suitable cement concrete foundation with cement concrete plaster complete with anti-vibration arrangement.

Standard: IS 15301:2003, NFPA 20 & 25 2013 Edition.

Make: KIRLOSKAR/ MATHER & PLATT/ MOTORS: SIEMENS /ABB KIRLOSKAR or Equivalent

3

SETS

2

4	<p>Supply of Control Panel suitable for automatic operation of fire fighting pumps consisting (2no. of hydrant, 1no. of Standby pump & 2 nos. jockey pump)</p> <p>a) Necessary FS cabling, cable tray, wiring, earthing from panel to individual equipment / pump in pump room shall be included in the quoted price. Contractor has to submit panel SL D/GA dwg for approval.</p> <p>(b) Facility for more selections i.e auto or manual.</p> <p>(c) Protection failure and control cabling.</p> <p>(d) Interlocking of pressure switch with pumps.</p> <p>(e) Soft starter.</p> <p>(f) Compatible for IBMS & suitable arrangement for Diesel engine. Complete in all respect as required.</p> <p>Standard: IEC 60204 - 1 NEC (NFPA 70), UL listing and UL Certification</p> <p>Make: L&T / OMRON/ SIEMENS or Equivalent</p>	SETS	1	
5	<p>Supplying, laying, testing & commissioning of FRLS, PVC outer sheath, steel armoured, aluminium / copper conductor, 1100v grade power cables with glands etc. The cables shall be laid in tray / Hume pipe / in trenches/on walls/ floor etc. as required.</p> <p>Standard: IS 1554 (Part 1) - 1988 or Equivalent</p> <p>Make: Polycab/CCI/ Gloster/Finolex/RR Kabel/Havells or Equivalent</p>			
5.1	3.5C x 120 sq.mm xlpe Aluminium armoured cable for Main electric pumps	RMT	60	
5.2	4 C x 16 Sqmm. xlpe Aluminium armoured cable for Jockey pumps	RMT	60	
5.3	12 C x 2.5 Sqmm. FRLS Copper cable for Diesel engines	RMT	100	
5.4	2 C x 2.5 Sqmm. FRLS Copper armoured cable for Instrumentation	RMT	150	
6	<p>G.I Earthing Strips</p> <p>Standard: IS: 3043:1987 standards MS spacers and GI clamps or Equivalent</p>			
6.1	i) 50mm x 6 mm Thickness	Mtrs	150	

6.2	ii) 6 swg bare G.I wire	Mtrs	50	
7	Supply of Pressure Gauge (for all pipes) of range 0 - 15 Kg / cm ² Polished Stainless Steel Case with positive seal against weather, moisture & dust, with Glycerine filled, screwed, nipple, isolation Valve, U-type stainless steel siphon tube and complete with necessary as required. Standard: IS: 3624:1987 Make: HGURU / FIEBIG or Equivalent	NOS.	10	
8	Supply of Pressure Switches for automation of fire pumps. Pressure switches shall be SPDT type suitable for single phase supply with diaphragm, IP 67 protection as required. Standard: IEC -60617. Make: DANFOSS / INDFOSS / Swizer or Equivalent	NOS.	5	
9	Supplying of Class 'C' heavy duty GI. Pipes conforming to IS 1239 (Part-1) : 1990 (up to 150mm dia) and IS 3589:2001 with wall thickness of 6.35mm (for 200mm and above) including fittings like elbows, tees, flanges, tapernuts, bolts, (galvanised), gaskets etc, The cost shall include cutting, welding, fixing in / on walls, ceiling by using suitable type of supports, clamps, anchor fasteners and MS angle supports (All MS supports / clamps to be painted with two coats of primer) as per drawings. The quoted rate shall also include for chasing / chipping walls, making bores / core cutting in walls / slab / beams and making them good with filler material and finishing with cement mortar etc. complete. The quoted rate shall also include painting of exposed pipes with one coat of etching primer and with two coats of synthetic enamel paint of approved red colour / shade Make: TATA /Jindal/ SAIL or Equivalent			
9.1	a) 300 mm dia	MTR	15	
9.2	b) 250 mm dia	MTR	15	
9.3	c) 200 mm dia	MTR	70	
9.4	d) 150 mm dia	MTR	1250	
9.5	e) 100 mm dia	MTR	100	
9.6	f) 80 mm dia	MTR	60	
9.7	g) 50 mm dia	MTR	20	
9.8	h) 25 mm dia	MTR	20	

10	Supply of C.I. Y type Strainer with S.S. Screen/ SS 304 having 1.2mm perforation with required accessories. Standard. (IS 907: 1984, PN 16) Make: AUDCO/KIRLOSKAR/H-SHANKAR/LEADER/ZOLOTTO/INTERVALVE or Equivalent.			
10.1	a) 250 mm Dia.	NOS.	2	
11	Supply of C.I. Sluice valve Non rising (Standard IS: 14846: 2000,PN 16) with flanges, nut bolts, gaskets complete as required. Make: AUDCO/ KIRLOSKAR H-SHANKAR/ LEADER/ ZOLOTTO/ INTERVALVE or Equivalent.			
11.1	a)300 mm dia.	NOS.	2	
11.2	b)250 mm dia.	NOS.	4	
11.3	c) 200 mm dia.	NOS.	4	
11.4	d) 150 mm dia.	NOS.	6	
11.5	e) 100 mm dia.	NOS.	4	
11.6	f) 80 mm dia.	NOS.	2	
12	Supply of C.I. Butterfly valve (Standard: IS - 13095: 1991, PN 16) with flanges, nut bolts, gaskets etc. complete as required. Make: AUDCO/KIRLOSKAR/ H-SHANKAR/ LEADER/ ZOLOTTO/ INTERVALVE or Equivalent.			
12.1	a) 150 mm dia.	NOS.	10	
12.2	b) 100 mm dia	NOS.	8	
12.3	c) 80 mm dia	NOS.	35	
13	Supplying of C.I. Non-return valves as per Standard IS:5312(Part 1):2004,(PN 16) swing check type with Flanged End required flanges, nuts, bolts, gaskets etc. complete as required. Make: AUDCO/KIRLOSKAR/H-SHANKAR/LEADER/ZOLOTTO/INTERVALVE or Equivalent			
13.1	a) 150 mm dia.	NOS.	3	
13.2	b)100 mm dia.	NOS.	2	

14	<p>Supply of Air vessel of size 300 x 1200mm, long fabricated from 6mm thick M.S Plate and installed vertically on suitable legs. legs shall be provided with M.S. plate of size 50mmx50mmx6 mm at bottom with necessary accessories. As required for complete installation.</p> <p>Standard: (IS 14845: 2000(Reaffirmed 2010))</p> <p>Make: AUDCO/LEADER/ZOLOTTO/INTERVALVE or Equivalent.</p>	NOS.	1	
15	<p>Supplying and fixing approved make 25mm dia. automatic air release valve with unions etc. complete. Standard (IS 14845: 2000(Reaffirmed 2010))</p> <p>Make: AUDCO/LEADER/ZOLOTTO/INTERVALVE or Equivalent.</p>	NOS.	10	
16	<p>Supply of Gun metal Single headed Fire Hydrant Single Landing Valve with 80mm N.B. flanged inlet, brass spindle controlled 63mm dia female instantaneous outlet type. GM coupling, blank cap (PVC/ABS), chain, twist release type lug & all accessories Conforming to Standard - IS :5290: 1993.Including fixing with anchor fastener and flanged tapping from wet riser complete as required.</p> <p>Make: NEWAGE /AAG/ WINCO/ NEWTECH/ PAD MINI or Equivalent</p>	NOS.	31	
17	<p>Supply of Fire Hose Cabinet wall mounting type 18SWG thickness (750 mm x 600 mm x 250 mm deep) with required accessories as per specification. (NFPA 14 rules)</p> <p>Make: MS / DKP Sheet or Equivalent</p>	NOS.	31	
18	<p>Supply non-percolating rubber reinforced lined Fire Hose pipe (as per Standard- IS : 636: 1988, IS 14933: 2001)) of 63 mm dia and 1no x 15 mtrs long. The hose shall be rated for burst pressure of 38kg/sq cm. Hose shall be complete with ISI marked GM/SS male & female coupling IS :903) bound as per specification.</p> <p>Make: NEWAGE /AAG WINCO/ NEWTECH/ PADMI NI or Equivalent.</p>	NOS.	62	

19	Supply of 63mm dia instantaneous pattern Gun metal short branch pipe, (Standard -IS 2871: 2012) 20 mm dia nozzle conforming to IS 903, suitable for inter connection to hose pipe coupling complete as required by the Local Fire Authority. Make: NEWAGE /AAG WINCO/ NEWTECH/ PADMI NI or Equivalent	NOS.	31	
20	Long branch pipe GM / SS-304, Standard -IS 2871: 2012) *63 mm dia nozzle. Make: NEWAGE /AAG WINCO/ NEWTECH/ PADMI NI or Equivalent.	NOS.	1	
21	Gun branch (Jet, Spray & Fog type) SS-304 Standard- (IS 2871: 2012) Make: NEWAGE /AAG WINCO/ NEWTECH/ PADMI NI or Equivalent.	NOS.	2	
22	Supply of First Aid Hose Reel equipment conforming to Standard -IS:884-1985 (Reaffirmed 2005) comprising of hose reel drum, swinging type fixing bracket, 19 mm shut off nozzle and Rubber hose of 25 mm bore x 30mtr. Long etc. as per specification complete as required. Make: NEWAGE /AAG WINCO/ NEWTECH/ PADMI NI or Equivalent.	NOS.	13	
23	Supply of forged Brass Ball Valve. Standard (IS 13114: 1991 (Reaffirmed 2005), PN 25 Make: AUDCO/KIRLOSKAR/H-SHANKAR/LEADER/ZOLOTTO/INTERVALVE or Equivalent.			
23.1	a) 25mm dia	NOS.	13	
24	Supply of 150mm dia Cast Iron Four Way Fire Brigade Inlet having inbuilt Gun metal Non- return valve as per Standard - IS: 904: 1983 having 4 nos. of 63 mm dia inlet with blank cap and chain with necessary fittings, flanges, nut bolts etc. complete as required. Make: NEWAGE/ AAAG / WINCO / NEWTECH / PADMI NI or Equivalent	SETS	3	
25	Supply, fabricating, installing structural steel supports for fixing all sizes of pipes with MS Channels, Angles, Flats, Rods, as required at site with anchor fasteners, Clamps, threaded rods, nuts, bolts, washers etc complete with painting. Standard (IS 1239 (Part 1): 2004 Make: Jindal / Tata/ or Equivalent.	Kgs	2000	

26	Providing protection to underground pipes and fittings by applying protective primer thereafter wrapping with Pypkoe or equivalent material of 4mm thick & 150 mm width protection coating as per Standard- IS:10221 -2008 by thermo fusion process. Overlap shall be maintained at 15mm the application process shall be strictly according to manufacturer's specification. Make: IWL or Equivalent.	Mtrs	150	
27	Anti - Corrosive Tape:- The underground steel pipes shall be protected by coating and wrapping. The coating and wrapping shall be done, in general as per Standard- IS:10221-1982 . *as per specification - wrapping tape spirally, thermo sealing complete (only for the underground pipes covered with Sand and soil) Make: Rustech / Pypkoe / or equivalent)	Mtrs	150	
28	Civil Works:			
28.1	i. Civil work for Pedestals at all elevations using shuttering (750X300X300MM.)	Nos	450	
28.2	ii. Road Crossings(1000mmx1000mm).	Mtrs	150	
28.3	iii. Pump Beds.	Nos	5	
28.4	iv. Dismantling beds	Nos	4	

1.2. Without restricting to the generality of the foregoing, the work shall include the following:

The specifications are general in nature and the department reserve the right to go for better specifications among the tenderers.

1.2.1. A Hydrant System covering the entire Factory and Admin Building consisting of the following:

A. Fire Pumps - 5 No's

- i). **2 No's- Electric driven Fire pumps (Hydrant)** Horizontal, centrifugal, end suction pump to ensure a minimum pressure of 3.5 kg / sq.cm. at highest and farthest outlet at specified flow of 2850 lpm at 90 m. The delivery pressure at pump outlet shall be not less than 171m³/hr @ 7.0Kg/cm²(g) discharge pressure, The pump shall be capable of giving a discharge of not less than 150 percent of the rated discharge, at a head of not less than 65 percent of the rated head. The shut off head shall be within 120 percent of rate head. Head conforming to IS standards.
- ii). **1No's - Diesel Engine driven fire pump (Standby Pump)** Horizontal, centrifugal, end suction pump to ensure a minimum pressure of 3.5 kg / sq.cm. at highest and farthest outlet at specified flow of 2850 lpm at 90 m. The delivery pressure at pump outlet shall be not less than 171m³/hr @ 7.0Kg/cm²(g) discharge pressure, The pump shall be capable of giving a discharge of not less than 150 percent of the rated discharge, at a head of not less than 65 percent of the rated head. The shut off head shall be within 120 percent of rate head. Head conforming to IS standards. With MS Diesel tank (**200 ltr** capacity)
- iii). **2 No's Electric driven pressurization pump (Jockey Pumps)** for System pressurization of 2850 LPM at 90 M. head Jockey pump of 10.8 m³/hr @ 7.0 Kg/cm²(g) discharge pressure, 2900 RPM with the motor. (Stand by).

B. The pressure in the hydrant pipe work shall be kept constant at 171m³/hr. @ 7.0Kg/cm² (g).

- C. Pipes for Wet Riser system shall be of **GI pipe Class "C"** (Heavy Duty). piping system ancillaries such as Suction and Delivery Headers, Air Vessel, Pressure Gauges, Pressure Switches, Pump Panel etc. as required.
- D. External Hydrant Ring Main of 300 mm 250 mm dia, 200mm dia, 150mm dia, 100mm dia and 80mm dia with single headed Yard Hydrants, RRL Hoses, Branch Pipes and 1 number Iron "F" Rad etc. all housed in a Hose Box.
- E. Internal Hydrant system at Admin Building require single headed landing valves on each floor accompanied by 1 number swinging type Hose Reel, 2 numbers RRL Hoses, 1 number of Branch Pipe and 1 number Iron "F" Rad etc. all housed in the niche. Bidder shall provide front frame with shutter for niche.
- F. To obtain the approval of the relevant drawings before actual installation at site and to get the complete installation inspected and passed by the concerned authorities i.e. District Fire officer, Telengana state Disaster response and fire service department central region, Medchal dist, Fire station, Cherlapally in consultation with IGMH officials.
- G. This is total turnkey project. Successful bidder has to bring all material as per above proposal, carry out all civil works, installation and commissioning and training to IGMH Employees. Supplier has to run the plant for 3 months.
- H. Warranty a period of One year will start from the date of successful Commissioning and Handing over of the system- to I.G.Mint Hyderabad.

1.2.2. POWER AND CONTROL PANEL AND OTHER CONTROL COMPONENTS.

1.2.2.1. Scope

Fire Fighting Pumps & Accessories and related electrical works the controller is built in accordance with the latest edition of the EN-12845 Standard, and also based on the National Fire Protection Association standard for the Installation of Centrifugal Fire Pumps, **NFPA No.20** (Centrifugal Fire Pumps 2013 Edition) or NFPA Standards (Latest Edition), This section covers the detailed requirements of the power and the control panel for the wet riser system, and also for the various control components in the system.

1.2.2.2. Power and Control Panel. (Make: L&T, Diamond electrical / SPC electrotech Pvt. Ltd. Or equivalent)

1.2.2.3. Constructional Requirements:

The power and control panel shall be totally enclosed, free standing floor mounted cubic type, fabricated out of sheet steel not less than 2mm thick. Where necessary, additional stiffening shall be provided by angle iron frame work. General construction shall be of compartmentalization and sectionisation such as mains incomes, electric fire pump, diesel fire pump, pressurization pump, and control, so that there is no mix up of power and control wiring and connections in the same sections as far as possible. The panel shall also have the space for cable alleys. The space for cable alleys shall be at least 200mm wide to the entire depth of panel. The panel shall be front operated type with all connections accessible from the front. Front doors shall be hinged type. Back doors shall be hinged type for inspection.

The door hinges shall be of concealed type. The doors for bus bar chamber shall be of removable type with the help of bolts. The doors shall be provided with quick fixing doors knobs with indication. The general arrangement of the panel shall be got approved before fabrication the cubicle construction shall be to IP 21 as per IS: 2147. Inside

1.2.2.4. Cable entries and gland plates.

All cable entries shall be through gland plates which are removable and sectionalized. Where heavy cable are brought in and terminated, suitable clamps shall be incorporated to relieve the stresses on the glands due to the weight of the cable. Gland must be double compression type, cable must be armored XLPE AI with suitable size, cable will be in the scope of firm. Cable entries may be from top or bottom depending on the equipment layout and cable scheme as approved.

Make **by Cable:** Polycab, CCI, Gloster, Havells, RR kabets or equivalent

1.2.2.5. Bus bar and Connections.

The Bus bar shall be air insulated, and of copper of high conductivity electrolytic quality (grade E 91 E to IS: 5082) and a adequate cross section. Current density shall not exceed 1.3 amps. Per sq

.cm. All connections to individual circuits from the bus bars shall preferably be with solid connections. The bus bars and the connections shall be suitably covered with PVC sleeves or in an approved manner. Bus bar shall be suitably supported using non-hygroscopic insulated supports. High tensile bolts and spring washers shall be provided at bus bar joints.

1.2.2.6. Earthing Arrangement.

Supply, laying, testing and commissioning of earthing flats using MS spacers and GI clamps complete in all respects as per spec. no. GE/STD/FF/008 GI clamps 24mm x 5mm shall be run at the rate of the board 2 nos., earth terminals shall be provided at the ends of the GI strip for connection to earth system.

1.2.2.7. Terminal Blocks and Small Wiring.

Terminal blocks shall be heavy duty type and generally not less than 15 amps 250V grade up to 100V, and 600V grade for the rest of the functions. They shall be easily accessible for maintenance. All control wiring inside the panel shall be with PVC insulated copper conductor of 2.5 sq.mm size and 600V grade conforming to IS:694-1977. Suitable colour-coding must be and terruting adopted. Wiring harness shall be neatly formed and run preferably function wise, and as far as possible segregated voltage wise, Identification ferrules shall be used at both ends of the wires.

1.2.2.8. Instruments and Lamps.

All indication lamps and instruments shall be flush mounted type in front of the panel. The voltmeter and ammeter shall of size 100mm nominal (dial size) conforming to clause 1.5 of IS 1248 for accuracy. Current transformers shall be provided with ammeters. Indicating lamps to indicate the availability of electric supply shall be provided at the incoming section. Necessary indicating lamps for alarm indication and battery charging shall be provided in the respective sections. All indicating lamps and meter shall be protected with HRC cartridge type fuses. Energy meter to be installed for energy calculation.

1.2.2.9. Labels

All internal components shall be provided with suitable identification labels. Suitably engraved labels shall be fixed at the panel for all switches, instrument push buttons, indicating lamps etc.

1.2.2.10. Painting

The entire panel shall be given a primer coat of red lead after degreasing and phosphate treatment and two coat of final paint or approved shade before assembly of various items.

1.2.2.11. Equipment Requirements

The power and control panel shall comprises individual section for the various equipment's of the system and controls, in a combined cubicle type design. All switches MCCB, MCBS and uses switch unit shall be conforming to relevant IS.

1.2.2.11.1. Incomer Section & Outgoing Section.

A. Incomer section:

1 no. 300 amps 4Pole MCCB unit complete. One set of 96 mm square Ammeter (0-400 Amps) complete with selector switch and CTS. One set of 96mm square Voltmer (0-500 V) complete with control fuses and selector switch. One set of phase indicating lights with control fuses. One set of 4 strips of 300 Amps aluminium bus bars.

B. Outgoing Feeder.

(i) One number of 250 Amps 4Pole MCCB unit complete, SP Preventer, ML 4 type contractor for star delta starting, start and stop push buttons, auto-manual switch, Ammeter with CTS, A S S , phase indicating lights. Auxiliary Contractors for interlocking / sequence of operation, control terminals complete in all respect with interconnections for Hydrant Pump and sprinkler pump.

(ii) Two numbers of 63 Amps rated 4Pole MCCB unit complete, ML 1.5 type contractor D O L starting with overload relay, start and stop button. Ammeter, CTS and selector switch, haze indicating lights, Auxiliary contacts for interlocking / sequence of operation, control terminals complete in all respect for Jockey Pump & fire booster pump.

C. Control wiring from pressure switches of different settings in Hydrant and Jockey Pumps, for sequence of operation shall be included to complete the system.

D. Colour code with ferrule marking shall also be making.

E. The wiring shall be PVC insulated and PVC armored aluminums conductor cable of 650 /10

0 volts grade conforming to IS 1554 as required from Fire Pump Board to motor and cable of suitable size. Make MCCB: Schneider, Siemens or equivalent.

1.2.2.11.2. Electric driven Fire pump Section.

This section shall incorporate the following facilities.

- i) MCCB, (Make: Schneider, Siemens or equivalent.)
- ii) Control system components and equipment such as relays, contractors, and timers etc. for automatic operation. (Make: L&T, Siemens or equivalent.)
- iii) Starter Unit, Current Transformer and ammeter. (Make: Universal or equivalent.)
- iv) Indication lamps, their fuses, terminal block, push buttons, control and selector switches etc. are as required. (Make: L&T, Siemens or equivalent.)
- v) Pump lock out devices due to faults or abnormalities as specified in operating sequence.
- vi) Visual/audio alarms, indications and communications facility as specified in operating sequence.
- vii) Necessary inter-connection and control wiring etc. (Make: CCI, Gloster, Havells or equivalent.)

1.2.2.11.3. Engine Section.

The engine section shall incorporate the following facilities :-

- i) Control system components and equipment such as relays, contractors, and timers etc. for automatic operation. Relays Make: L&T, Siemens or equivalent.
- ii) Instruments, indicator lamps, fuses terminal blocks, push buttons, control and selector switches etc. as are required and Make: L&T, Siemens or equivalent..
- iii) Engine shut down and block out devices due to faults or abnormalities as specified.
- iv) Visual/audio alarms and indications as specified.
- v) Inter-connection and control wiring etc. Control Cable Make: CCI, Gloster, Havells or equivalent.

1.2.2.11.4. Auxiliary Pump Section.

The auxiliary pump section for Jockey pump shall incorporate the following:

- i) 4P&N MCBS
- ii) Control system components such as relays, times, contractors etc. as are necessary for functional requirements.
- iii) Starter unit, current transformer and ammeter. Make: Universal or equivalent
- iv) Indication lamps, fuses, terminal blocks, push buttons selector, switch etc.as required and Make: L&T, Siemens or equivalent.
- v) Inter-connections and control wirings etc.

1.2.2.11.5. Control Section.

This section shall incorporate the following -

- i) Control components integrating the various sections, so as to satisfy the functional requirements.
- ii) Battery charger unit with boost / float charge facility with voltmeter, capable of independently charging 2 sets of batteries at a time. Battery Make: Exide, Amron.
- iii) Visual / audio alarms not covered in individual sections.
- iv) Lamps healthy test facility.
- v) Instruments, indicating lamps, pushbuttons, fuse terminal blocks etc. as are required and Make: L&T, Siemens Or equivalent.
- vi) Test facility to simulate operation of hydrants.

1.2.2.11.6. Other Control Components:-

1.2.2.11.6.1. Pressure Switches.

Make: Indfo/ Danfoss, Swizer Or equivalent

Pressure switches shall be provided for switching on and off the pressurization pump at present pressures and also for switching off the fire pump at present pressure. Being the main component for initiating the signal for the operation of the pumps, the pressure settings shall be totally reliable, sturdy in construction and of long life. The pressur

e settings shall be adjustable.

1.2.2.11.6.2. Power Supply for Controls.

In order to ensure that the control system remains co-operational at all times the control system shall be designed for 24 VDC operation fed from the battery. This shall be independent of the starting battery for the engine i.e. battery shall remain trickle charged at all times from the separate battery charger at the control system.

1.2.3. Electrical Work and Earthing.

1.2.3.1. Scope:

This section covers the detailed requirements of electrical works including earthing, for the materials installation. Electric power supply shall be terminated in the incoming switch gear of the power and control panel by the Department. Each conducting body i.e. Panel, Motor etc. Should Have 2no way earthing in the health function. All further connections to the various components of the system shall be the responsibility of the contractor, for a complete and working system, satisfying all the functional requirements.

The scope shall particularly include the following:

Power and Control Panel(s) as given in relevant section. All inter-connections with multi-core armored copper cables of size suitable between various control units and control panel(s) all power cable connections with multi-core armored aluminum cables of size as specified in BOQ, between panels, motors etc. Necessary earthing with 2 Nos. G.I. plate electrodes and loop earthing. The work shall be carried out conforming to CPWD General Specifications for Electrical works Part-I (Internal) amended up to date and Part-II (External) amended up to date.

1.2.3.2. Cable:-

Supplying, laying, testing & commissioning of FRLS, PVC outer sheath, steel armoured, aluminium / copper conductor, 1100v grade power cables with glands etc. The cables shall be laid in tray / Hume pipe / in trenches/on walls/ floor etc. as required.

Make: Polycab/Finolex / RR kabel / Havells Or equivalent cable

Sr.No	Cable	Qty in Mtrs Running
1	3.5C x 120 sq.mm xlpe Aluminium.-for Main Pump.	60 (Approx)
2	12 C x 12.5 Sqmm. FRLS Copper-for Diesel Engine Pump	25 (Approx)
3	4 C x 16 Sqmm. Aluminium-for jockey Pump	60 (Approx)
4	2C x 2.5sq.mm FRLS copper for instrumentation	100 (Approx)
5	G.I Earthing Strips	
	i) 50x3mm Thickness	150 (Approx)
	ii) 6 swg bare G.I wire	50 (Approx)

1.2.3.3. Fire pumps:-

Fire Fighting Pumps & Accessories and related electrical works the controller is built in accordance with the latest edition of the IS 15301: 2003, EN-12845 Standard, and also based on the National Fire Protection Association standard for the Installation of Centrifugal Fire Pumps, **NFPA 25 uses NFPA No.20** standard for the installation of stationary pumps for fire protection. (Centrifugal Fire Pumps 2013 Edition) or NFPA Standards (Latest Edition),

A. Electric driven Fire pump (Hydrant)- 2 no's

Makes of Pumps : Kirloskar / Mather&Platt Or equivalent. Makes of Motors : Siemens/ ABB/ Kirloskar Or equivalent

B. Scope

This section covers the details of requirements of the motor, starter and pump for the electrically operated fire pump.

C. General.

The electric fire pump shall be suitable for automatic operation complete with necessary electric motor and automatic starting gear, suitable for operation on 415 volts, 3 phase, 50 Hz A/C system,. Both the motor and the pump shall be assembled on a common base plate of fabricated MS channel type or cast iron type.

D. Drive

The pump shall be only direct driven by means of a flexible coupling. Coupling guard shall also be provided.

E. Main Fire Pump (Electrical)

The fire pump shall be horizontal end suction centrifugal type. It shall have a capacity to deliver 2850 LPM, 90meter head 2970 RPM as specified, developing adequate head so as to ensure a minimum pressure of 3 kg. per sq.cm at the highest and the farthest outlet. The delivery pressure at pump outlet shall be not less than 171m³/hr @ 7.0Kg/cm²(g) discharge pressure,

The pump shall be capable of giving a discharge of not less than 150 percent of the rated discharge, at a head of not less than 65 percent of the rated head. The shut off head shall be within 120 percent of rated head.

The pump casing shall be of cast iron to grade FG 200 to IS: 210 and parts like impeller, shaft sleeve, wearing ring etc. shall be of non-corrosive metal like bronze / brass / gunmetal.

This shaft shall be of stainless steel. Bearing of the pump shall be effectively sealed to prevent loss of lubricant or entry of dust or water.

The pump shall be provided with a plate indicating the suction lift delivery head, discharge speed and number of stages. The pump casing shall be designed to withstand 1.5 times the working pressure.

F. Motor

The motor shall be squirrel cage A/C induction type suitable for operation on 415 volts 3 phase 50 Hz system. The motor shall be totally enclosed fan cooled type conforming to protection class IP 21 vide IS-4691. The class of insulation shall be B. The motor shall be rated to continuous duty as per relevant IS and shall have a horsepower rating necessary to drive the pump at 150 percent of its rated discharge.

G. Motor Starter.

The motor starter shall be automatic star Delta type conforming to IS: 1822-1967.

The starter shall not incorporate under voltage or overload trip or single-phase preventer.

The starter assembly shall be suitably integrated in the power control panel for the wet riser system. Each pump shall be provided with vibration isolating pads of appropriate size.

1.2.3.4. Electric driven pressurization pump (Jockey Pumps) - 2 no's

A. Makes of Pumps: Kirloskar / Mather&Platt Or equivalent. **Makes of Motors :** Siemens/ ABB/ Kirloskar Or equivalent

B. Scope.

This section covers the details or requirements of the auxiliary equipment necessary for the operation of the fire pumps and the wet-riser system.

C. Drive

The pump shall be directly driven from the electric motor. Flexible coupling and coupling guard shall be provided.

D. Capacity.

Vertical inline pump to ensure a minimum pressure of 3.5 kg / sq.cm. at highest and farthest outlet at specified flow of 250 lpm at 90 m. head conforming to IS standards IS 15301: 2003,

The discharge and head of the jockey pump shall be as mentioned in Bill of Quantities.

Jockey pump shall be Horizontal /Vertical mono-block / coupled type. The pump casing shall be of cast iron and parts like impeller, sleeve, wearing ring etc. shall be of noncorrosive met

al like bronze, brass or gunmetal. The shaft shall be of stainless steel. Bearing of the pump shall be effectively sealed to prevent loss of lubricant or entry of the dust or water. The pump casing shall be designed to withstand 1.5 times the working pressure.

E. Motor.

The motor shall be squirrel cage A.C. induction type suitable for operation on 415 volts 3 phase 50 Hz, system. The motor shall be totally enclosed fan cooled type conforming to protection clause IP 21 of IS 4691. The class of insulation shall be B; synchronous speed shall be 1800 LPM, 12.5hp, 70 meter head, Jockey pump of 10.8 m³/hr @ 7.0 Kg/cm²(g) discharge pressure, 2900 RPM with the motor. The motor shall conform IS 325-1978 and rated for continuous duty.

F. Motor Starter.

The motor starter shall be automatic star delta type with overload trip, but without under voltage / no volt trip. Starter shall conform to IS 1822-1967.

1.2.3.5. Diesel Engine driven fire pump- 1no

A. Makes of Pumps : Kirloskar / Mather&Platt Or equivalent. **Makes of Motors :** Siemens/ ABB/ Kirloskar Or equivalent

B. Scope of work:-

Fire Fighting Diesel Pump & Accessories and related electrical works is built in accordance with the latest edition of the IS 15301: 2003, EN-12845 Standard, and also based on the National Fire Protection Association standard for the Installation of Centrifugal Fire Pumps, NFPA No .20 & 25 (Centrifugal Fire Pumps 2013 Edition) or NFPA Standards (Latest Edition)

C. General

The diesel pump set shall be suitable for automatic operation complete with necessary automatic starting gear, for starting on wet battery system and shall be complete with all accessories. Both engine and pump shall be assembled on a common bed place, fabricated with mild steel channel.

D. Drive

The pump shall be only direct driven by means of a flexible coupling. Coupling guard shall also be provided. The speed shall be 1500/1800 RPM.

E. Fire Pump (Diesel Engine)

Engine Type: - Diesel Engines for fire pump drive shall be of the compression ignition type. The fire pump shall be horizontal split casing centrifugal type. It shall have the capacity to deliver 2850 LPM at 90m head and 2300 RPM as specified. Developing adequate head so as to ensure a minimum pressure of 3 kg. Per sq.cm. At the highest and the farthest outlet. The delivery pressure at the pump outlet shall be not less than to deliver 171 m³/hr @ 7.0 Kg/cm² (g). In any case. The pump shall be capable of giving a discharge of not less than 150% of the rated discharge at a head of not less than 65% of the rated head. The shut off head shall be within 120% of the rated head. The shaft shall be of stainless steel. The pump shall be provided with mechanical seal. The pump casing shall be designed to withstand 1.5 times the working pressure. Bearing of pump shall be effectively sealed to prevent loss of lubricant or entry of dust or water.

F. Diesel Engine Rating:-

The engine shall be cold starting type without the necessity of preliminary heating of the engine cylinders or combustion chamber (for example, by wicks, cartridge, heater plugs etc.)

The engine shall be multi cylinder /vertical, 4-stroke cycle, water-cooled, diesel engine, developing suitable HP at the operating speed specified to drive the fire pump, Continuous capacity available for the load shall be exclusive of the power requirement of auxiliaries of the diesel engine, and after correction for altitude, ambient, temperature and humidity for the specified environmental conditions.

This shall be at least 20% greater than the maximum UP required to drive the pump at its duty point. It shall also be capable of driving the pump at 150% of the rated discharge at 65% of the rated head.

The engine shall be capable for continuous non-stop operation for 8 hours. The engine shall

have 10% overload capacity for one hour in any period of 12 hours continuous run.
The engine shall accept full load within 15 seconds from the receipt of signal to start.
The diesel engine shall conform to IS B.S. 649/IS 160/IS 10002, all amended up to date.

G. Engine Cooling System.

The engine cooling system shall be of the closed-circuit type.

- Heat exchanger type
- Radiator type The engine cooling system shall be radiator water cooled system. The radiator assembly shall be mounted on the common base plate. The radiator fan shall be driven by the engine as its auxiliary with a multiple fan belt. When half the belt brake remaining belts must be capable of driving the fan. Cooling water shall be circulated by means of an auxiliary pump of suitable capacity driven by the engine in a closed circuit. The outlet for the wastewater coming from the heat exchanger shall be one size larger than the inlet.
- The wastewater shall be discharged into a visible open waste cone. •Discharge can be piped to a suction reservoir provided a visual flow indicator and temperature indicators are installed. Heat exchanger standard equipment.
- Sea water or fresh water; sacrificial anode optional.
- Engines are shipped without coolant.
- Cooling water line (cooling loop) shall have a manual by-pass.
- Cooling water line and by-pass shall include:
 - o indicating manual shutoff valve
 - o approved flushing-type strainer
 - o pressure regulator
 - o automatic valve
 - o second indicating manual valve or check valve
 - o pressure gauge, Water, ethylene glycol, inhibitor coolant mixture. 50% water 50% coolant.
 - o Coolant to conform to ASTM D4985.
 - o Heat transfer
 - o Corrosion resistance
 - o Prevents scale and sludge build up
 - o Provides freeze and boil over protection
 - o Pre-mix before installing in engine to prevent premature engine heater failure . Coolant heater is the only AC power on engine; Separate AC junction box required. Do not use controller AC for power supply.
 - o Add coolant mixture before applying AC power.
 - o All heaters single voltage; Optional AC voltages available - location specific.
 - o Engine coolant maintained at 490C (1200F).

H. Fuel System. Diesel Tank (200 ltr capacity)

The fuel shall be gravity fed from the engine Diesel tank 200 ltr capacities to the engine driven pump. The engine fuel tank shall be mounted either over or adjacent to the engine itself suitably wall mounted on brackets. The fuel filter shall be suitably located to permit easy servicing.

The engine fuel tank shall be welded steel construction (3mm thick) and of capacity sufficient to make the engine to run on full load for at least 8 hours. The tank shall be complete with necessary supports, level indicator (protected against mechanical injury), inlet, outlet, overflow connections drain plug and piping to the engine fuel tank.

The outlet should be so located as to avoid entry of any sediment into the fuel line of the engine. A semi rotary hand pumps filling the engine fuel tank together with hose pipe 5 mtr. Long with a foot-valve etc. shall also form part of the scope of work. The fuel tank is sized for 200 Ltr Capacity, 5.07 liter/kW (1 gal/HP) plus 10% (5% for expansion and 5% for sump).

- The fuel tank shall be reserved exclusively for the fire pump diesel engine.
- There shall be one fuel tank per engine; the fuel tank shall be located above ground.

- The fuel tank outlet shall be located so that its opening is no lower than the level of the engine's fuel transfer pump.
- The static head pressure limits shall not be exceeded when the level of fuel in the tank is at a maximum.
- In sites where temperatures below 00 C (320F) could be encountered, the fuel tank shall be located in the pump room. The diesel engine must use clean #2 diesels.
- #1, blended fuel, or jet fuel have a lower certain ratings, which reduces the power output by 10% of the engine compared with the listed power.
- Residual fuels, domestic heating furnace oils, and drained lubrication oils shall not be used.
- A guard, pipe protection, or approved double walled pipe shall be provided for all exposed fuel lines. Fuel supply and return lines shall be flame-resistant reinforced flexible hose.
- Fuel piping shall not be galvanized steel or copper.
- There shall be no shut-off in the fuel return line to the tank.
- The grade of fuel oil shall be indicated on the fuel tank by letters that are a minimum of 15 2mm (6 in) in height and in contrasting color to the tank.

I. Lubricating Oil System.

Forced feed Lubricating Oil system shall be employed for positive lubrication. Necessary Lubricating Oil filters shall be provided and located suitably for convenient servicing.

J. Starting System.

The starting system shall comprise of necessary battery / batteries, starter motor of adequate capacity and axle type gear to match with the toothed ring fly wheel. Suitable metallic relay to protect starting motor from excessively long cranking runs shall be included within the scope of the work. The metallic relay protection shall be integrated with engine protection system.

The capacity of the battery shall be suitable for meeting the needs of the starting system but not less than 180 AH.

The battery capacity shall be adequate for 10 consecutive starts without recharging with cold engine under full compression. The scope shall cover all cabling, terminals, initial charging etc.

K. Exhaust System.

The exhaust system shall be complete with silencer suitable for indoor installation, and silencer piping including bends and accessories needed. The exhaust pipe shall protrude outside the pump room. The total backpressure shall not exceed the engine manufacturer's recommendations. The exhaust piping shall be suitably supported and the pipe used shall be of medium class MS pipe.

L. Engine Shut Down Mechanism.

This shall be manually operated and shall return automatically to the starting position after use.

M. Governing System.

The engine shall be provided with an adjustable governor to control the engine speed with 5 % of its rated under all conditions of load up to full load. The governor shall be set to maintain rated pump speed at maximum pump load.

N. Engine Instrumentation.

Engine instrumentation shall include the following:

- a. Lubricating Oil Pressure Gauge. (Make: H.Guru, Fiebig or equivalent.)
- b. Lubricating Coolant Oil temperature gauge
- c. Water temperature gauge.
- d. Water pressure gauge
- e. Pressure Switch. (Make: Indfo/ Danfoss, Swizer or equivalent.)
- f. Tachometer
- g. Hour meter
- h. Starting key
- i. Additional Gauges: •Two voltmeters (Make: Universal or equivalent)

- t.)- one for each set of batteries
- j. Diesel tank 200Ltr capacity,
- k. Hooter for audio Alarm (Industrial type),

The instrument panel shall be suitably mounted on the engine.

O. Pipe Work:

The piping for exhaust outlet as well as fuel piping between fuel tank and the engine shall be with Medium class M.S.

P. Anti-Vibration Mounting.

Suitable vibration mounting duly approved by engineer-in-charge shall be employed for mounting the unit so as to minimize transmission of vibration to the structure. The isolation efficiency achievable shall be clearly indicated in the report, which will be submitted to engineer-in-charge before installation.

Q. Control Electronic Engines: -

Engines with an electronic control module (ECM) shall have an alternate ECM wired to produce full power in the event of primary ECM failure. •There shall be a single ECM Selector Switch, with no off position, to transition from the primary ECM to the alternate ECM. •A visual indicator shall show when the engine is running with the alternate ECM. (On both the engine panel and on the diesel controller)

R. Battery.

(Make: Exide, Amron Or equivalent)

Each engine shall be provided with two storage battery units. •Electrolyte shall be added to the batteries a minimum of 24 hours prior to the time the engine has to be started. •At 4.5o C (40oF) each battery shall have twice the capacity sufficient to maintain 3 minute attempt-to-start cycle (15 seconds of cranking and 15 seconds of rest in six consecutive cycles).

Necessary float and boost charger shall be incorporated in the control section of the power and control panel to keep the battery under trickle condition. Ammeter to indicate the state of charge of the batteries shall be provided. There should be two means for recharging the storage batteries. •The battery chargers in the diesel controller is the primary source. •The alternator on the engine is the secondary source,

S. Battery Voltage 12: 12V 24: 24V,

Main battery contactors supplying current to the starting motor shall be capable of manual mechanical operation to energize starting motor. •Manual toggles are provided on the Clarke instrument panel and additionally manual start contactors for only the JW6H & JX6H series engines.)

•Clarke electric starting standard;

•One (1) starter on JW6H, JX6H units.

•Two (2) starters on JU4H, JU6H units.

1.2.3.6. Fire Hydrant Pipe Line. GI pipe Heavy Grade (Class “C”).

A. Make: TATA/ JINDAL/ SAIL Or equivalent

B. Pipes and Fittings:-

Pipes for **GI pipe Class “C” (Heavy Duty)**.Pipes 80mm dia up to 300mm dia shall be GI and conform to IS 1239(Part - 1): 1990 up to 150 mm dia & IS 3589: 2001 for 200mm dia & above AS PER IS-1239(Part - 1): 1990 & 3589: 2001. All pipes shall be I.S.I. marked. Fittings for black steel pipes shall be malleable iron suitable for welding or approved type cast iron fittings with tapered screwed threads. The pressure in the hydrant pipe work shall be kept constant at 171m³/hr. 7.0Kg/cm² (g).

C. Jointing’s:-

Joint for black steel pipes and fittings shall be metal-to-metal tapered thread or welded joints . A small amount of red lead may be used for lubrication and rust prevention in threaded joints.

Joints between C.I. or black steel pipes, valves and other apparatus, pumps etc. shall be made with C.I. flanges with appropriate number of bolts. Flanged joints shall be made with 3mm thick insertion rubber gasket.

Note: Joints for pipes and fittings 80mm up to 250mm diameter shall be threaded joints using Teflon Tape or equivalent bonding tape on the threads. Joints for pipe and fittings above 80mm to 250mm diameter shall be welded joints.

D. Pipe Protection:-

a) All pipes in underground masonry trenches/service tunnels, above ground and in exposed locations shall be painted with one coat of red oxide primer and two or more coats of synthetic enamel paint of approved shade.

b) Pipes in wall chases shall be protected from corrosion by 2 coats of bituminous paints.

c) Protection of Underground pipes.

The underground steel pipes shall be protected by coating and wrapping. The coating and wrapping shall be done, in general as per IS:10221-1982.

It specified in Bill of Quantities, the proprietary pipe production system shall be provided as per the Manufacturers recommendation. The proprietary system shall be of approved make.

E. Installation of Pipes.

1). **Above ground (A/G) piping:** Supply, Installation, Testing and Commissioning of Above ground 'GI pipes (C class /heavy grade) confirming to IS 1239 up to 150 mm dia & IS 3589 for 300mm dia & above , Including Cutting, Threading, X-ray quality Welding Etc. and providing all fittings e.g.. Elbows, Reducers, Clamps, Hangers, Flanges (confirming to class ASA 150 commercial), Gaskets, Nuts, Bolts & Washers etc.

i) **Painting:** - All Hydrant shall be painted with Signal Red colour Paint. .All pipes Surface shall first be cleaning by sand blasting thoroughly before application of primary coat. The minimum DFT of each coat shall be 35 microns. After application of primer coat two coats of enamel paint shall be applied. Each coat shall be given 24hrs drying time. No thinner shall be used wherever required all pipes headers shall be worded indicating the direction of the pipe.

Painting shall be expertly applied; the paint shall not over run surfaces not requiring painting such as walls, surfaces etc. Nuts and bolts shall be painted black, while valves shall be painted Blue.

2).Underground (U/G) piping: (riser tapping's)

Supply, Fabrication, Erection & commissioning of **GI "Heavy" 'C' class pipes** confirming to IS 1239/3589 with necessary fittings like reducers, Tees, Bend (Confirming to IS 1239) Flanges(confirming to class ASA 150 commercial) With suitable type of supports ,Nut Bolts, clamps, Gaskets , etc including cutting, X-ray quality welding, Testing including consumables for HYDRANT SYSTEM. The Pipes to be laid underground with 25mm sand bedding, with supply of sand & laying below the pipe.

All pipes shall be adequately supported from ceiling or walls by structural clamps fabricated from M.S. structural e.g. rods, channels, angles and flats. All clamps shall be painted with one coat of primer and two coats of black enamel paint. The contractor shall provide inserts at the time of slab casting or provide suitable anchor fasteners.

Providing protection to underground pipes and fittings by applying protective primer thereafter wrapping with Pypkote or equivalent material of 4mm thick & 150 mm width protection coating as per IS:10221 by thermo fusion process. Overlap shall be maintained at 15mm the application process shall be strictly according to manufacturer's specification Approximate- 250 Mtrs

The pipe supports or hangers shall be designed to withstand combined weight of pipe, pipes fittings, fluid in pipe and insulation. Pipe supports shall be of steel and coated with rust preventing paint and finished with two coats enamel paint. The maximum spacing for pipes supports shall be as below:

Pipe (MM) Spacing (MTR) Size of support

Up to 25 - 2.0mtr - 6mm

32 to 65 - 2.4mtr - 8mm

75 to 125 - 2.7mtr - 10mm

150 & above - 3.0mtr - 12mm

Pipes supports shall be spaced at maximum interval of 3 mtrs. On either side of heavy fittings and valves. Wherever piping passes through walls, pipe sleeves of diameter larger than that of piping shall be provided. Pipe sleeves shall be of steel or cast iron pipe.

The underground piping shall be supported with cement concrete blocks of suitable size and strength provided at an interval of 2.5 mtrs. The pipes shall be laid at 1 mtr. Depth (top of the pipe) and trench excavated for sufficient width. The rate of pipes shall include the scope of excavation / refilling the trench. 1:2:4 concrete thrust blocks are also to be provided at turning of pipe. Pipe Supports pedestals, with 300 x 300 x 600 mm best quantity thick pc 1:48, internal wall plastered rough with sponge finish. The cost of installation includes concrete pedestals etc. as required and to be included in the item rate.

*(**G.I.** pipes of HEAVY class (C - Class), as per IS: 1239, upto 150 mm dia & IS 3589 for 200mm dia & above (Make -Jindal / TATA/ SAIL Or equivalent)

- I. 300mm Pipe -**15mtr** (Approx)
- II. 250mm Pipe -**15mtr** (Approx)
- III. 200mm Pipe -**70mtr** (Approx)
- IV. 150mm Pipe -**1250mtr** (Approx)
- V. 100mm Pipe -**100mtr** (Approx)
- VI. 80mm Pipe -**60mtr** (Approx)
- VII. 50mm Pipe -**20mtr** (Approx)
- VIII. 25mm Pipe -**20mtr** (Approx)

F. IS Flanges:-

Contractor shall provide orifice flanges fabricated from 6mm thick stainless steel plates on the branch lines feeding different zones/floors so as to allow required flow of water at a pressure of 3.5 kg/sq.cm. for each hydrants and 2 bar at 1800 LPM at installation valve for sprinkler system. The contractor shall design the orifices to ensure the required pressure.

G. L Angle / C Channels. (Approximate)

L Angle / C Channels-**2000kg**

* Supports for Pipes base and for support of the Hose Boxes and hydrant system providing and fabricating of MS structural supports.

Structural steel supports for fixing all sizes of pipes with MS Channels, Angles, Flats, Rods, as required at site with anchor fasteners, Clamps, threaded rods, nuts, bolts, washers etc complete with painting.

(Make-Jindal Hisser/Tata or Equivalent)

H. Anti-Corrosive tape. (150 mtr Approximate)

The underground steel pipes shall be protected by coating and wrapping. The coating and wrapping shall be done, in general as per IS:10221-1982.

*as per specification - wrapping tape spirally, thermo sealing complete (only for the underground pipes covered with Sand and soil)

(Make- Rustech/Pypkote / equivalent)

1.2.3.7. Valves & Other Accessories.

A. General

Each valve body shall be marked with cast or stamped lettering giving the following information's:

- a) The manufacturer's name or trade mark.
- b) The size of the valve
- c) The guaranteed working pressure.

Isolating valves on the water supply lines shall be full bore ball valve type for pipe diameters up to 50mm. For 65mm dia and above these shall be butterfly valves.

B. Forged Brass Full Way Ball Valve (PN 25) 25mm Dia- - 13 Nos (Approximate)

The ball valve be made forged brass and suitable for test pressure of pipe line. The valve shall be internally threaded to receive pipe connections. The ball shall be made from brass and machined to perfect round shape and subsequently chrome plated. The body and ball shall be of copper alloy and stem seat shall be of Teflon. The handle shall be provided with PVC jacket.

The valves shall be of full bore type and of quality approved by the Consultant / Owner.
(Make - Audco / Kirloskar/ H-Shankar /Leader/Zolotto / Intervolve Or equivalent)

C. Air Vessel and Air Release Valve.

i. Air vessel on top of wet riser piping shall be fabricated of at least 8mm thick steel to withstand the pressure, with dished ends and supporting legs. This shall be of 250mm dia and 1 m high. This shall be complete with necessary flange connection to the wet riser piping and Air vessel of size 300 x 1200 mm long fabricated from 6mm thick M.S Plate and installed vertically on suitable legs. legs shall be provided with M.S. plate of size 50mmx50mmx6mm at bottom with necessary accessories. as required for complete installation. IS 14845: 2000(Reaffirmed 2010)

ii. Air release valve with necessary piping to meet the functional requirement of the system. The air vessel shall be of continuous welded construction and galvanized to be IS 14845: 2000(Reaffirmed 2010). Auto Air Release valve of 25mm NB suitable for pressure not less than 15 Kg/Sq.cm.

a) Air Vessel - 01nos

(Make - Audco/Leader/Zoloto/Intervolve or Equillant.)

b) Air Release Vessel 25 mm - 08nos

(Make - Audco/Leader/Zoloto/Intervolve or Equillant.)

D.C.I. Butterfly valve (IS:13095:1991 , PN 1.6)

Make: Audco / Kirloskar / H-Shankar /Leader/ Zolotto / Intervolve or Equillant.

The Butterfly valve shall be suitable for water works. The butterfly valves shall withstand hydrostatic test pressure of 15kg/sqcm. Or 1.5 times the working pressure whichever is higher. Butterfly valves shall be of centric disc construction with single piece body of Cast Iron to IS: 210 with disc of aluminium bronze with nitrile seat. Shaft shall be stainless steel with Teflon bearing butterfly valve shall conform to PN 16 rating and shall be provided with suitable matching flanges compatible with PN 16 rating of valves. C.I. Butterfly valve (IS:13095:1991 , PN 16) with flanges, nut bolts, gaskets etc. complete as required.

- a) 150 mm dia - 10 Nos
- b) 100 mm dia - 8 Nos
- c) 80 mm dia - 35 Nos

E. C.I. Non-return valves as per IS:5312: 2004, (PN 16) swing check type. (NRV) (Approximate)

Non-return valves are to be IS:778-1984 manufactured from gun-metal or dezincification resistant brass. (Make - Intervolve/ Audco / Kirloskar / H-Shankar /Leader/Zolotto or Equillant.)

- I. 250mm dia - **RO**
- II. 200mm dia - **RO**
- III. 150mm dia - **3 no's**
- IV. 100mm dia - **2 no's**
- V. 80mm dia - **2 no's**

F. Drain Valve.

Drain Valves are to be provided at all low points in the system for draining the water. These shall be 40mm dia full way ball valve fixed on 40mm dia black steel pipe.

G. C.I. Sluice Valves Non rising (IS: 14846:2000, PN 16), (Approximate)

Wheel operated, PN 16 standard IS 14846, ISI , with flanges, nut bolts & gaskets etc. (Make - Audco / Kirloskar / H-Shankar /Leader/Zolotto / Intervolve or Equivalent)

- I. 300mm dia - **2 No's**
- II. 250mm dia - **4 No's**
- III. 200mm dia - **4 No's**
- IV. 150mm dia - **6 No's**
- V. 100mm dia - **4 No's**
- VI. 80mm dia - **2 No's**

H. Pressure gauge, Cypers & Switches. (Approximate)

Pressure switches shall be differential type for operation of all pumps and for the various duties and settings required. Pressure switches shall be for heavy duty operation and of approved make. All pressure switches shall be factory calibrated.

a) Pressure gauge with Siphon tube / Cypers (IS 3624:1987)-10nos (Approximate)

Pressure Gauge (for all pipes) of range 0 - 15 Kg / cm² Polished Stainless Steel Case with positive seal against weather, moisture & dust, with Glycerine filled, screwed, nipple, Pressure gauge shall be 100 mm dia, isolation valve, U-type stainless steel siphon tube and complete with necessary as required. IS 3624:1987.

(Make - Heibig/ H-Guru & Fiebig or Equillant)

b) Pressure Switch-05 nos (Approximate)

Pressure Switches for automation of fire pumps. Dictated by line pressure. Pressure switches shall be SPDT type suitable for single phase supply with diaphragm, IP 67 and shall be provided with water protection as required. IEC 60617 - BS 3939, NFPA standards

(Make Danfoss / Indfoss or Equillant)

I. Internal Fire Hydrants Single Landing Valves - 31 Nos

Gun metal Single headed Fire Hydrant Single Landing Valve with 80 mm N.B. flanged inlet, brass spindle controlled 63 mm dia female instantaneous outlet type. GM coupling, blank cap (PVC/ABS), chain, twist release type lug & all accessories Conforming to IS:5290:1993. Including fixing with anchor fastener and flanged tapping from wet riser complete as required.

Yard Hydrant valves shall be single headed as per IS: 5290:1993 The valve shall be complete with hand wheel, quick coupling connection spring loaded type and gun metal blank cap. The Yard Hydrant shall be laid on 150mm dia Hydrant Ring Main, branched off to 80mm dia and Stand Post of 80mm dia.

a) Gun metal Single headed Fire Hydrant Single Landing Valve with 80 mm N.B - 31 nos

Make: (Newage / AAG/ Winco / Newtech / Padmini or Equillant)

1.2.3.8. Hose pipes, Branch Pipes and Nozzles.

A. Hose Pipe : Hose pipe shall be rubber lines woven jacketed and 63mm in diameter.

B. They shall conform to type-2 (Reinforced rubber lined) of IS:636-1988. The hose shall be sufficiently flexible and capable of being rolled. Each run of hose pipe shall be complete with necessary coupling at the ends to match with the landing valve or with another run hose pipe or with Branch pipe. The couplings shall be of instantaneous spring lock type.

a) Non-percolating rubber reinforced lined fire hose pipes(15mtr)- 62 Nos,

(as per IS: 636: 1988) type-B of 63 mm dia and 15m length, ISI marked brass / SS male & female coupling (IS: 903), (Make - AAG / Winco / New Age/ Padmini or Equillant)

b) Non-percolating rubber reinforced lined fire hose pipes(30mtr)- 2 Nos,

(as per IS: 636: 1988) type-B of 63 mm dia and 30m length, ISI marked brass SS male & female coupling (IS: 903), (Make - AAG / Winco / New Age/ Padmini or Equillant)

C. Branch Pipes: Branch pipe shall be of SS, gunmetal 63mm dia and be complete with male instantaneous spring lock type coupling for connection to the hose pipe. The branch pipe shall be externally threaded to receive the nozzle. Nozzle shall be of instantaneous pattern conforming to IS:2871: 2012.

a) Gun metal short branch pipe SS-304 - 31nos,

Gun metal short branch pipe, 20 mm dia nozzle conforming to IS:2871: 2012., suitable for inter connection to hose pipe coupling complete as required by the Local Fire Authority.

(Make - Newage / AAG/Winco /Newtech / Padmini or Equillant)

b) Long branch pipe SS-304 -01nos,

*63 mm dia nozzle conforming to IS:2871: 2012.

(Make - Newage / AAG/Winco /Newtech / Padmini or Equillant)

c) Gun branch (Jet, Spray & Fog type) SS-304 - 02nos,

(Make - Newage / AAG/Winco /Newtech / Padmini or Equilent)

D. Nozzle: The nozzle shall be of copper or gunmetal, 20mm in internal diameter. The screw threads at the inlet connection shall match with the threading on the branch pipe, the inlet end shall have a hexagonal head to facilitate screwing of the nozzle on to the branch pipe with nozzle spanner. End couplings, branch pipes, and nozzles shall conform to IS:903-1993, two hoses of 15 mtr. Lengths with couplings shall be provided with each external (yard) hydrant. One nozzle and one branch pipe with coupling shall be provided with each yard hydrant.

E. External Fire Hose Cabinet.

Supplying, Installation, Testing and Commissioning (SITC) of Weather proof cabinet fabricated from 16 gauge M.S/DKP Sheet metal with Double glazed (4 mm glass panel) door having locking arrangement, painted "Signal Red" painted to shade No.536 if IS:5. "Fire Hose" written on front including suitable supports to Place 900 mm above ground level, approximately size 750 x 600 x 250 mm deep (To house Two lengths of Canvas hose with coupling, branch pipe and nozzle and accessories which includes hammer and set of duplicate keys) for External Hydrants. The hose cabinet shall be accommodating the RRL type B synthetic hose set - 2 nos and Branch pipe with nozzle - 1 no.

a) fire hydrant MS cabinet type shutter -31 nos
(Make -MS/DKP Sheet or Equilent)

b) Stand Post. The Stand Post shall be of M.S pipe of 80 mm dia with M.S Bend and flanges. The height shall be 1200 mm or as directed by the Engineer in charge.

F. Internal Fire Hose Cabinet.

Each internal fire hydrant valve shall be housed in a niche of size indicated on drawings. Each internal fire hose Cabinet shall hold double headed hydrant, 4 Hoses and 2 Branch pipes and 1 no. Dunlop hose reel mounted on a drum.

- a. The cabinet shutters & frames shall be fabricated from boxed steel sections and MS/DKP plate 2mm thick.
- b. The front glass of shutters shall be 5.0mm thick clear glass and shall be held by means of rubber. Locking arrangement shall also be made with one number of mortice lock of approved make. A separate Key Box of 16mm thick MS sheet with glass facing shall be provided.
- c. The Shutter shall be given a powder coat finish in post office red colour.

i) Fire hose reel Cabinet -13 no's,
(Make -MS/DKP Sheet or Equilent)

G. Hose Reel Drum.

Supplying, Installation, Testing and Commissioning (SITC) Of The hose reel shall be directly tapped from the riser through a 36 mtrs long and 25mm dia heavy duty PVC Hose Long with GM nozzle and control valve, shutoff valve, the red colour drum and the reel being firmly held against the wall by use of dash fasteners. The Hose Reel shall be swinging type (180 degrees) and the entire Drum, Reel etc. shall be as per IS:884-1985. The rubber tubing shall be of approved quality and the nozzle shall be 6mm dia shut off type. all mounted on circular hose reel of heavy duty mild steel construction and cast iron brackets.

a) First Aid hose reel -13 no's,
(Make - Omex/ Sri/ AAG/ Winco/ New Age / Padmini or Equivalent)

H. Fire Brigade.

Supply, Installation, testing and commissioning (SITC) of 4 way Cast Iron body fire brigade inlet breaching head as per IS:904:1983 Specification with 63 mm dia instantaneous type inlet and 150mm dia flanged outlet with built-in check valve for fire brigade connection etc. complete with 150 NB Gate valve and 150 NB Non return valve. 150mm dia Cast Iron Four Way Fire Brigade Inlet having inbuilt Gun metal Non-return valve as per IS: 904 having 4 nos. of 63 mm dia inlet with blank cap and chain with necessary fittings, flanges, nut bolts etc. com

plete as required.

a) 4 Way fire Brigade-3no

(Make- AAG/ Winco/ New Age / Padmini or Equivalent

Siamese Connection: - Supply, Installation, testing and commissioning (SITC) of 4 Way Siamese Connection, with Isolation valve, complete (150 NB Body/Cover -CI

I. C.I 'Y' Strainer(IS: 907:1984, PN 16):-

Supply, Installation, Testing and Commissioning of C.I. Y type Strainer with S.S. Screen/SS 304 having 1.2mm perforation with require accessories.IS: 907:1984, PN 16

a) 250 mm Dia.-2 Nos

(Make: Audco/ Kirlosker/ H-Shankar/ Leader/ Zoloto/ Intervale or Equilent

1.2.3.9. Civil Works:

A. ALL KIND OF CIVIL WORKS FOR FIRE HYDRANT SYSTEMS to be carried out by the supplier,

Pipes supports shall be spaced at maximum interval of 3 mtrs. On either side of heavy fittings and valves Construction of Civil Valve chamber of 1.2 m x1.2m x1.0 m with C.I Cover. Wherever piping passes through walls, pipes sleeves of diameter larger than that of piping shall be provided. Pipe sleeves shall be of steel or cast iron pipe.

Providing of support for Over ground lines (Civil Brick work complete with Plaster of size 400 W mm x 500 L mmx 300 H mm),

The Providing of support for Underground lines (Civil Brick work complete with Plaster of size 230 W mm x 150 L mmx 150 H mm) underground piping shall be supported with cement concrete blocks of suitable size and strength provided at an interval of 2.5 mtrs. The pipes shall be laid at 1 mtr. Depth (top of the pipe) and trench excavated for sufficient width. 1:2:4 concrete thrust blocks are also to be provided at turning of pipe. Cleaning for surface area dressing of bottoms, depth upto 2.5 Mts, including getting out the excavated soil, all kinds of soil, Excavation of Trenches for pipe laying to road cross area, Construction of Pipe Supports pedestals, with 300 x 300x 750 mm best quantity thick pc 1:48 , internal wall plastered rough with sponge finish.)

- a. Civil work for Pedestals at all elevations using shuttering (750X300X300MM)
- b. Road Crossings (1000mmx1000mm)
- c. Pump Bed
- d. Dismantling beds & Work for water tank cleaning water proofing with complete plaster and colour after the work.

2.0 TERMS & CONDITIONS FOR FIRE HYDRANT SYSTEM.

2.1. This is total turnkey project. Successful bidder has to bring all material, Labours as per above proposal, carry out all civil works, bring manpower, installation , commissioning, training and 3 months run the plant to be included in this total project. 1 year warranty from the date of commissioning.

2.2. Important Instructions:-

- Vendors are advised to visit site before quoting for the job if in case of any queries / doubt to gauge the quantum of work.
- It is strongly advised for prospective bidders to visit the site of work to get a thorough understanding of the scope and nature of work involved. No request for clarification on tender scope shall be entertained after opening of bids.
- IGMH Site visit is required for all the participating bidders and bidder should submit site visit report certified by authorized representative / official of IGMH along with tender document.
- Site visit certificate is a part of EOI documents, hence must be submitted together with tender document. Only bidders with site visit report will be eligible for further scrutiny of tender document.

3.0 Technical Information.

3.1. The bidder clearly specify the Make and Model including technical specifications enclosing detailed brochure for the equipment offered among with technical bid.

- 3.2.** Contractor shall submit along with the tender copies of detailed specifications, cuts, leaflets and other technical literature of equipment and accessories offered by him.
- 3.3.** Contractor's attention is specially invited to the special conditions and other clauses in the agreement which required the contractor to:-
- Submit detailed shop drawings.
 - Use material of specific makes and brands
 - Obtain all approvals from Fire Fighting authorities.
 - Execute the entire work on a turn-key basis so as to provide a totally operating plant.
- 3.4.** The bidders need to specify clearly the Make and Model including technical specifications enclosing detailed brochure for the equipment offered along with technical bid

4.0 One point contact for water, electricity, air will be given. From there supplier draw all the lines for completion of the work.

5.0 Site Accessibility.

- 5.1.** The equipment's are to be located in pump house located within the Service block.
- 5.2.** The equipment must be carried from the goods receiving station to the site in an extremely careful manner to prevent damage to the equipment building or existing services.
- 5.3.** Prior submission of bid, Contractor must visit the site and familiarize himself with the locations and area of proposed installation at IGMH site. The tenderer to ensure that the equipment offered by him are of suitable dimensions that they can be equipped, carried and planed in position without any difficulty.

6.0 System Descriptions.

- 6.1.** The Hydrant System shall comprise of AC motor driven pump set, standby diesel pump Set, and jockey pump set for pressurization with all required accessories including valves, special fittings, instrumentation, control panels and any other components required to complete the system in all respects.
- 6.2.** The Hydrant System shall be semi-automatic in action and shall be laid covering the entire area externally and all the floors internally.
- 6.3.** The Hydrant System shall be kept pressurized at all times. The proposed Jockey Pump shall take care of the leakages the system, pipe lines and valve glands.
- 6.4.** The pressure in the hydrant pipe work shall be kept constant at 171m³/hr @ 7.0Kg/cm²(g). In the event of fire when any of the hydrant valve in the network is opened, the resultant fall in header pressure shall start the AC motor driven fire pump through pressure switches automatically. There shall be one Diesel Engine Driven pump as standby for both hydrant systems. In case of failure of electricity or failure of Electric Pump to start on demand, the standby Diesel Pump shall automatically take over.
- 6.5.** However, shutting down of the pump set shall be manual except for the Jockey Pump which shall start and stop automatically through pressure switches. In addition to auto start arrangements, the main pump shall also have an over-riding manual starting facility by push bottom arrangement.
- 6.6.** The ring for the hydrant system in the yard shall be laid in soil 1 Meter deep or in Rectangular trench. The pipe laid in soil shall be protected as specified.
- 6.7.** The yard hydrants shall be placed at a regular spacing of 45m center to center. The Following accessories are required near each yard hydrant.
- One no. gunmetal single headed hydrant vales.
 - Two nos. RRL Hoses of size 63mm dia x15m long.
 - One nos. gunmetal Branch pipe. Gun metal hydrant valve, RRL hose and gunmetal branch pipe will be accommodated in an aluminum hose box mounted on brick pedestals.
 - 1 number Iron "F" Rad each Hose Box with attached Chain (use for Hydrant valve open purpose)
- 6.8.** The Internal Hydrant System (Wet Risers) shall be provided at points as indicated on the drawing on each floor Admin Building.
- 6.9.** The hydrant point shall be directly tapped from the Riser pipes, and shall be furnished with required accessories such as -
- One no. gunmetal single headed hydrant valves.
 - Two nos. RRL Hoses of size 63mm dia x 15m long.

- iii. One no. first aid Dunlop hose reel full swinging type 20mm dia x 30m long.
- iv. One nos, gunmetal Branch pipe.
- v. 1 number Iron "F" Rad each Hose Box with attached Chain (use for Hydrant valve open purpose)

The hydrant risers shall be terminated with air release valve at the highest points to release the trapped air in the pipe work. At each tapping from the Riser an Orifice Plate shall be located in the lower floors to reduce the pressure.

An IGMH fire water tank 2,30,000 liters capacity will be connected to the fire hydrant system.

- 6.10.** To compensate for slight losses of pressure in the system and to provide an air cushion for counteracting pressure surges/water hammer in the underground pipe work Air Vessels shall be furnished in the pump room near fire pumps. The air vessel shall be normally partly full of water and the remaining being filled with air which shall be under compression when the system is in normal operation.
- 6.11.** The entire Wet Riser and external Hydrant Ring Main System shall be fed from the water supply (Static Water Tank) and pump room.
- 6.12.** The fire water storage tank shall be provided with a level switch which is a part of Main.
- 6.13.** Control Panel installed in Main MCC block to indicate both Low - low level and High level alarm/indication at main Control Room.

7.0 TRAINING & HANDING -OVER:-

The Successful bidder shall have to operate the plant after commissioning to 3 months with manpower and the vendor shall provide free of cost. Training should be given at I.G.Mint, Hyderabad site along with training material.

8.0 DRAWINGS & TECHNICAL SUBMITTALS:-

Successful bidder must submit the documents, drawings and recommended spares list pertaining to supplied and installed system and same shall be mandatorily submitted to the in-charge before handing over of the system to IGMH.

All references to manufacturer's model numbers and other pertinent information herein is intended to establish minimum standards of performance, function and quality. Equivalent compatible equipment from other manufacturers may be substituted for the specified equipment as long as the minimum standards are met. For equipment other than that specified, the contractor shall supply proof that such substitute equipment equals or exceeds the features, functions, performance, and quality of the specified equipment.

All the above equipment should be supplied with Operating, Technical / Service manuals

9.0 WARRANTY:-

All work performed and all material and equipment furnished under this contract shall be free from defects and shall remain so for a period of one year from the date of successful commissioning and Handing over of the system.

Warranty a period of One year will start from the date of successful Commissioning and Handing over of the system- to I.G.Mint Hyderabad.

10.0 MARKING:

- 10.1.** Each appliance shall be clearly and permanently marked with the following information:
 - a. Manufacturer's name or trade-mark if any;
 - b. Capacity of the pump in liters /minutes, and of the water tank in liters, and
 - c. Year of manufacture.

- 10.2.** The words "FIRE PUMP HOUSE" shall be painted in English and in Telugu on the Pump House Shed.
- i. All the Pumps, Equipments provided shall be named with a name plate beside so as to be identified by a person.
 - ii. The contractor shall give Bank Guarantee for trouble free performance and against the manufacturing defect for a period of three years from the date of supply of the Installed Systems.
- 11.0** The equipment's and Installation fire hydrant system shall comply with the following:-
- i. Occupational Safety, Health and Working Conditions, 2018
 - ii. National Building Code of India, 2016(Part #IV- Fire Safety)
 - iii. Regulations under Indian Electricity ACT 1910
 - iv. Fire Insurance Regulations
 - v. Workman's Compensation Act
 - vi. Bureau of Indian standards Code
 - vii. Industrial Safety Code.
 - viii. NFPA Standards (Latest Edition)
 - ix. NOC for Telangana state govt certificate
 - x. IS -1648-1961 code of practice for fire safety of buildings (general) firefighting equipment's and maintenance.
 - xi. IS 3844-1966 code of practice for internal fire hydrant in multi -storied building.
 - xii. IS-2217-1963 Recommendation for providing first aid firefighting arrangement in public buildings
 - xiii. Is -2190-971 Code of practice for selection, Installation and maintenance of portable first fire appliance.
 - xiv. IS-3589 Electrically Welded Steel pipes
 - xv. IS 5290-1993 internal landing Valve(Hydrant valve)
 - xvi. IS -884-1969 First and hose reel
 - xvii. Any other applicable rules.

12.0 Acceptance Criteria:-

Following test will be carried out. Suitability / acceptance of the fire hydrant system will be given only after achieving desired report as mentioned below.

12.1. Pressure testing: -

- a. The hydraulic pressure test will be conducted at 150% of the operating pressure (operating pressure 7 kg/cm²)
- b. Pipeline and other accessories must withstand the pressure around 2 hours without any leakage in pipeline, welding points, termination point etc.
- c. Pressure gauges are monitored to ensure that the pressure is maintained within the specified range

12.2. Flow testing:-

The flow test will be conducted to evaluate the water flow available at the hydrant during fire-fighting operations. The following steps will be involved:-

- a. Specific hydrants within the system will be selected for the flow test.
- b. A flow meter will be installed to the hydrant nozzle to measure the water flow rate accurately.(Firm has to submit calibration certificate of flow meter).
- c. Measurement of the water flow rate will be taken in liters per minute. Measurement will be taken at various points in system to assess the performance at different location.
- d. A flow of 2850 ltr per min thought out the test in each point.

12.3. Pipeline welding:-

- a. To check healthiness of hydrant pipeline welding firm has conducted Ultrasonic testing or magnetic particle test or radiographic test to inspect the internal structure of the weld.
- b. In case of any internal defects, such as lack of fusion, porosity, and inclusion etc. firm should do fresh welding until test report not get satisfactory.

12.4. Functional testing: Manual as well as auto operation of all valves, including gate valves, drain valves, check valves etc. will be carried out to ensure proper opening and closing mechanisms.

12.5. DG Pump Performance:-

- a. Time to start: The maximum acceptable time for the pump to automatically start and run after a power outage is 5 seconds.
- b. Fuel System: Automatic fuel switching to auxiliary tank during outages and adequate fuel level for sustained operation.
- c. Alarm and Monitoring: System triggers alarms for faults like engine failure or low fuel level.
- d. Flow and Pressure: Pressure test and flow test will be conducted as mentioned in point no. (1) and (

2)

- e. Performance Curve: Firm has to give pump's performance curve to verify it meets specific flow and pressure needs at various operating points.
- f. Noise Levels: noise levels emitted by the pump should not exceed 80 Db
- g. Vibration: vibration levels should fall within 0.15 to 0.25 inches per second (0.38 to 0.63 mm/s) at the pump mounting points.

13.0 All the above equipment should be supplied with essential/standard accessories. Good condition items from existing fire hydrant system may be used.

14.0 List of essential spares with their cost may be furnished separately.

A. Eligibility Criteria:

The bidder should meet the following qualification criteria:

1. **Experience & Past Performance:** The Bidder (manufacturer or principal of authorized representative - hereinafter referred simply as 'The Bidder') shall be a manufacturer that has regularly for at least the last three years manufactured, supplied, erected, Installed, commissioned Fire Hydrant System with the same or higher specifications of at least one number in last five years ending on 31.03.2024. At least one number of the product offered for supply should be in successful operation for at least one year on the date of bid opening.
2. **Capability - Equipment & manufacturing Facilities:** The bidder must have an annual capacity to supply, Erect, Install, commission Fire Hydrant System with the same or higher specifications.
3. **Financial Standing:** The average annual financial turnover of the bidder firm (manufacturer or principal of authorised dealer) during the last three years, ending on 31.03.2024 should be at Rs. 64.32 Lakhs as per the annual report (audited balance sheet and profit & loss account) of the relevant period duly authenticated by a Chartered Accountant/ Cost Accountant in India.

The net worth of the firm should

- i. not have eroded by more than 30% in the last three financial years ending 31.03.2024 and
- ii. Net worth of the bidder should not be negative as on 31.03.2024.

Note: Participating bidder needs to submit all related documents along with the bid.

Note:

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- i. All experience, past performance and capacity /capability related / data should be certified by the authorized signatory of the bidder firm. The credentials regarding experience and past performance to the extent required as per eligibility criteria submitted by bidder should be verified from the parties for whom work has been done.
- ii. All financial standing data should be certified by certified accountant's e.g. Chartered Accountants (CA

) in India

- iii. Bidder to furnish stipulated documents in support of fulfilment of eligibility criteria. Non-submission or incomplete submission of documents may lead to rejection of offer.

B. Undertaking :

1. Undertaking for acceptance of all the terms and conditions of the GeM Bid including Buyer Added Bid Specific Terms and conditions along with technical specification & scope of work without any deviation to be submitted duly sealed and signed.
2. Undertaking of declaration that the bidder is not blacklisted/debarred for dealing by Government of India.
3. Undertaking towards land border sharing submission criteria as per Ministry of Finance, Department of Expenditure, Public Procurement Division, Orders (Public Procurement 1,2 and 3) F. No. 6/18/2019-PPD dated 23rd/ 24th July 2020 (or any further amendments thereof) regarding eligibility of bidders from specified countries shall be applicable to this tender. Bidders are required submit the appropriate undertaking in this regard.
4. Documentary/undertaking against Make in India Status i.e. being a Class I/ Class II supplier with details of percentage.

C. The terms and conditions, guidelines of SPMCIL Procurement Manual Version 3.0 will be applicable to this bid at any stage to avoid any conflict at later stage. Kindly refer to GIT and GCC of SPMCIL Procurement Manual Version 3.0 for additional terms and condition as per the links given below:

- A. General Instruction to Tenderer(GIT):

<https://spmcil.com/uploaddocument/GIT3.0.pdf>

- B. General Conditions of Contract GCC):

<https://spmcil.com/uploaddocument/GCC3.0.pdf>

D. Special Instruction to Tenderers (SIT)

The following Special Instructions to Tenderers will apply for this purchase. These special instructions will modify/ substitute/ supplement the corresponding General Instructions to Tenderers (GIT). The corresponding GIT clause numbers have also been indicated in the text below. In case of any conflict between the provisions in the GIT and that in the SIT, the provisions contained in the SIT shall prevail.

1. **Signing and Sealing of Tender:** (GIT Clause No. 20.4 & 20.5) Tenderer shall sign all the pages of the tender document as token of the acceptance of all the tender conditions and upload through GeM portal.
2. **Price Schedule**(GIT Clause No. 10.2): The firm has to fill the Price Schedule as per IGMH format failing which the bid will be treated as unresponsive. And *Grand total amount arrived in Price schedule (of IGMH format)* has to be uploaded in Financial Bid of GeM Portal.

E. Special Conditions of Contract (SCC)

The following Special Conditions of Contract (SCC) will apply for this purchase. The corresponding clauses of General Conditions of Contract (GCC) relating to the SCC stipulations have also been incorporated below. These Special Conditions will modify/substitute/supplement the corresponding (GCC) clauses.

Whenever there is any conflict between the provision in the GCC and that in the SCC, the provision contained in the SCC shall prevail.

1. **Terms of Delivery:** (GCC Clause No.10)

1.1. Order has to be Supplied, Installed, Tested & Commissioned at IG Mint, Hyderabad within 180 days from the date of issue of GeM Contract/NAC.

1.2. ADDRESSES FOR DELIVERY OF CONSIGNMENT: CHIEF GENERAL MANAGER, INDIA GOVERNMENT MINT, P.B. NO.10, HCL POST, IDA PHASE II, CHERLAPALLY, R.R. DIST., HYDERABAD - 500051.

2. Warranty: (GCC Clause No.16) -

- i) The supplier should submit the warrantee certificate that the goods supplied under the contract are new, unused of the most recent or current models and incorporate all recent improvements in design and material unless provided otherwise in the contract.
- ii) The supplier further warrants that, all the goods and work supplied under this contract shall have no defect in design, materials or workmanship or from any act or omission of the supplier that may develop under normal use of the supplied goods in the conditions prevailing in the country of final destination.
- iii) This warranty shall remain valid for 12 months from the date of final acceptance certificate. The purchaser shall promptly notify the supplier in writing of any claims arising out under this warranty.
- iv) Upon receipt of such notice, the supplier shall repair or replace the defective goods or parts thereof without cost to the purchaser immediately.
- v) If the supplier having been notified fails to take remedial measure or rectify the defect within the period specified, the purchaser may proceed to take such action as may be necessary, at the supplier's risk and expense without prejudice or any other rights, which the purchaser may have against the supplier under the contract.

3. **Terms and Mode of Payments:** (GCC Clause No.22.3, 22.4, 22.6)

- i. Payment shall be released on actual consumption basis within 30 days from the date of acceptance by Mint Authorities subject to the submission of Bills.

F. Quality Control Requirements:

The supplier shall supply the goods as per the technical specification attached. In addition the supplier has to ensure:

- a. Installation, commissioning and proving of performance to be carried out by the supplier at India Government Mint, Hyderabad within stipulated time and to the satisfaction of user.
- b. India Government Mint, Hyderabad will conduct acceptance test of the delivered system in the

presence of the engineers from the successful bidder as per the quality control requirements given in the FAT norms.

G. Acceptance Criteria/FAT:-

Following test will be carried out. Suitability / acceptance of the fire hydrant system will be given only after achieving desired report as mentioned below.

1. Pressure testing: -

- i) The hydraulic pressure test will be conducted at 150% of the operating pressure (operating pressure 7 kg/cm²)
- ii) Pipeline and other accessories must withstand the pressure around 2 hours without any leakage in pipeline, welding points, termination point etc.
- iii) Pressure gauges are monitored to ensure that the pressure is maintained within the specified range.

2. Flow testing:-

The flow test will be conducted to evaluate the water flow available at the hydrant during fire-fighting operations. The following steps will be involved:-

- i) Specific hydrants within the system will be selected for the flow test.
- ii) A flow meter will be installed to the hydrant nozzle to measure the water flow rate accurately. (Firm has to submit calibration certificate of flow meter).
- iii) Measurement of the water flow rate will be taken in liters per minute. Measurement will be taken at various points in system to assess the performance at different location.
- iv) A flow of 2850 ltr per min thought out the test in each point.

3. Pipeline welding:-

- i) To check healthiness of hydrant pipeline welding firm has conducted Ultrasonic testing or magnetic particle test or radiographic test to inspect the internal structure of the weld.
- ii) In case of any internal defects, such as lack of fusion, porosity, and inclusion etc. firm should do fresh welding until test report not get satisfactory.

4. Functional testing: Manual as well as auto operation of all valves, including gate valves, drain valves, check valves etc. will be carried out to ensure proper opening and closing mechanisms.

5. DG Pump Performance:-

- i) Time to start: The maximum acceptable time for the pump to automatically start and run after a power outage is 5 seconds.
- ii) Fuel System: Automatic fuel switching to auxiliary tank during outages and adequate fuel level for sustained operation.
- iii) Alarm and Monitoring: System triggers alarms for faults like engine failure or low fuel level.
- iv) Flow and Pressure: Pressure test and flow test will be conducted as mentioned in point no. (1) and (2)
- v) Performance Curve: Firm has to give pump's performance curve to verify it meets specific flow and pressure needs at various operating points.
- vi) Noise Levels: noise levels emitted by the pump should not exceed 80 Db
- vii) Vibration: vibration levels should fall within 0.15 to 0.25 inches per second (0.38 to 0.63 mm/s) at the pump mounting points.

H. Check list for the bidder to submit the documents in Technical bid:

1	Experience & Past Performance: Documents in support
2	Capability - Equipment & Manufacturing Facilities: Documents in support
3	Financial Standing: Documents in support
4	Undertakings
4.1	Undertaking to all Technical Specifications & Scope of work without any deviation DULY STAMPED AND SIGNED
4.2	Undertaking to all terms and conditions as set forth in this GeM bid including Buyer Added Bid specific ATC Clauses.
4.3	Declaration that the bidder is not be blacklisted or debarred for dealing by Government of India
4.4	Undertaking towards Land Boarder Sharing
4.5	Undertaking to Make in India Declaration being Class-I/II with detailed Percentage
5	Acceptance of GIT & GCC as per the links provided in the Buyer added bid specific ATC Clauses
6	Any other document as per tender

NOTE: Any dispute arising out of this contract shall be subject to Hyderabad Jurisdiction only.

21. Buyer Added Bid Specific ATC

Buyer uploaded ATC document [Click here to view the file.](#)

Disclaimer/अस्वीकरण

The additional terms and conditions have been incorporated by the Buyer after approval of the Competent Authority in Buyer Organization, whereby Buyer organization is solely responsible for the impact of these clauses on the bidding process, its outcome, and consequences thereof including any eccentricity / restriction arising in the bidding process due to these ATCs and due to modification of technical specifications and / or terms and conditions governing the bid. If any clause(s) is / are incorporated by the Buyer regarding following, the bid and resultant contracts shall be treated as null and void and such bids may be cancelled by GeM at any stage of bidding process without any notice:-

1. Definition of Class I and Class II suppliers in the bid not in line with the extant Order / Office Memorandum issued by DPIIT in this regard.
2. Seeking EMD submission from bidder(s), including via Additional Terms & Conditions, in contravention to exemption provided to such sellers under GeM GTC.

3. Publishing Custom / BOQ bids for items for which regular GeM categories are available without any Category item bunched with it.
4. Creating BoQ bid for single item.
5. Mentioning specific Brand or Make or Model or Manufacturer or Dealer name.
6. Mandating submission of documents in physical form as a pre-requisite to qualify bidders.
7. Floating / creation of work contracts as Custom Bids in Services.
8. Seeking sample with bid or approval of samples during bid evaluation process. (However, in bids for [attached categories](#), trials are allowed as per approved procurement policy of the buyer nodal Ministries)
9. Mandating foreign / international certifications even in case of existence of Indian Standards without specifying equivalent Indian Certification / standards.
10. Seeking experience from specific organization / department / institute only or from foreign / export experience.
11. Creating bid for items from irrelevant categories.
12. Incorporating any clause against the MSME policy and Preference to Make in India Policy.
13. Reference of conditions published on any external site or reference to external documents/clauses.
14. Asking for any Tender fee / Bid Participation fee / Auction fee in case of Bids / Forward Auction, as the case may be.

Further, if any seller has any objection/grievance against these additional clauses or otherwise on any aspect of this bid, they can raise their representation against the same by using the Representation window provided in the bid details field in Seller dashboard after logging in as a seller within 4 days of bid publication on GeM. Buyer is duty bound to reply to all such representations and would not be allowed to open bids if he fails to reply to such representations.

[This Bid is also governed by the General Terms and Conditions/ यह बिड सामान्य शर्तों के अंतर्गत भी शासित है](#)

In terms of GeM GTC clause 26 regarding Restrictions on procurement from a bidder of a country which shares a land border with India, any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. While participating in bid, Bidder has to undertake compliance of this and any false declaration and non-compliance of this would be a ground for immediate termination of the contract and further legal action in accordance with the laws./जेम की सामान्य शर्तों के खंड 26 के संदर्भ में भारत के साथ भूमि सीमा साझा करने वाले देश के बिडर से खरीद पर प्रतिबंध के संबंध में भारत के साथ भूमि सीमा साझा करने वाले देश का कोई भी बिडर इस निविदा में बिड देने के लिए तभी पात्र होगा जब वह बिड देने वाला सक्षम प्राधिकारी के पास पंजीकृत हो। बिड में भाग लेते समय बिडर को इसका अनुपालन करना होगा और कोई भी गलत घोषणा किए जाने व इसका अनुपालन न करने पर अनुबंध को तत्काल समाप्त करने और कानून के अनुसार आगे की कानूनी कार्रवाई का आधार होगा।

---Thank You/धन्यवाद---