**Subject: Response-2 to Pre-bid queries for surface water project for Amritsar in Pre bid Meeting dated 13.08.2020.**

Name of Work: Request for Proposal Works and Operation Service (Design, Build and Operation) of 440 MLD Water Treatment Plant and associated Transmission Network and Over Head Service Reservoirs in City of Amritsar, Punjab, India.

RFP Reference No. IN-PMIDC-170755-CW-RFP

| Sl. No | Section | Clause | Page No | Subject | Clarification Required | Response |
|---|---|---|---|---|---|---|
| **447** | Volume 2 – Employer Requirements | **Clause a, viii, 1.11.8**<br><br>**Clause a, viii, 1.11.1,**<br><br>**Clause a, ix, 1.11.8** | **Page 15,** Page No – 6,15,16<br><br>**Page 6**<br><br>**Page 16,** | Optimization of OHSR Capacities | **Tender Condition:**<br>**Design Criteria, Employers Requirement:**<br>The referred clause states, “The Contractor shall plan and design the necessary Capital Works to ensure a sufficient supply of treated water from the Water Works to meet the Performance Standards; mainly maintaining minimum 1/3 volume of water in reservoirs at all times to allow 24/7 supply.”<br><br>**Brief Scope of Works,**<br>The referred clause states, “The system shall be designed to ensure uniform distribution of water to all OHSRs (managing minimum 1/3 quantity in all reservoirs at all times) such that 24/7 supply shall be managed drawing water from various OHSRs to supply to consumers.”<br><br>**Design Criteria,**<br>The referred clause states, “Design of feeder system to OHSR s shall be such that distribution of water to the OHSRs is ensured at all times to maintain water in OHSRs – not below 1/3 capacity of OHSRs**.**<br><br>**Appendix 1B Design Criteria:**<br>Capacity of Service Storage – as per Mass curve subject to 30% of Demand**.**<br><br>**Query:**<br>**From the above clauses, we understand, additional 1/3rd of capacity needs to be provided at all OHSRs.** | It is clarified that the bulk supply from the Water Treatment Plant to the Overhead Service Reservoirs through the transmission cum feeder network shall be designed such that there shall be minimum 33% storage at any point of time in a day to mitigate the risk of emptying of each OHSR<br><br>Provision shall remain as per the Proposal Document. |

| Sl. No | Section | Clause | Page No | Subject | Clarification Required | Response |
|---|---|---|---|---|---|---|
| | | | | | The additional 1/3 volume acts as dead storage, which is never utilized during 24 x 7 supply. Hence, we request you to eliminate the above clauses to optimize the capacities of OHSRs.<br><br>Also, kindly **allow the bidders to size the OHSR capacity based on appropriate mass balance. It is also requested to eliminate the minimum requirement of 30% of demand.** | |
| **448** | Volume 2 – Price Bid & Employer Requirements | **Clause c, xi, 1.11.8 Design Criteria**<br><br>**Clause c, xi, 1.11.1,** | Page No – 7,16<br><br>**Page 16,**<br><br>**Page 7** | Optimization of OHSR Capacities | **Price Bid, (Item Rate, Item No.1):**<br>The referred Item of Price Bid states, Construction of 36 Nos, 19 Nos and 22 Nos tanks of 1 ML, 1.5 ML and 2 ML respectively. Rates are to be quoted against each capacity of OHSR<br><br>**Volume 2, Employers Requirement:**<br>The referred clause states, “A key factor to be taken into account is the highly restrictive availability of land for installation of new reservoirs and hence the proposals should focus on expanding the utilizable storage through improved hydraulics and assigned demand patterns.”<br><br>**Brief Scope of Works, Volume 2, Employers Requirement:**<br>The referred clause states, “Transmission should be designed to meet demand fluctuations in supply areas under OHSRs (use of IA and other disruptive technologies are encouraged) and modify supply parameters. It is optional to use more than 1(one) peak factor in designing the transmission system such more water can be delivered during peak hours.”<br><br>**Query:**<br>Owing to acute land constraint, it is crucial to improve effectiveness of the system covering the required demand. Abiding by the above clause, the capacities of | Provision shall remain as per the Proposal Document.<br><br>Please also refer to Item no. 3 Addendum No. 4 |

| Sl. No | Section | Clause | Page No | Subject | Clarification Required | Response |
|---|---|---|---|---|---|---|
| | | | | | proposed tanks can be optimized, without deviating the end requirements (DBOT concept). However, the present BoQ other clauses (mentioned above) do not favour the efficacy of the above points.<br><br>**It is hence requested to provide a single Lump-sum item for construction of OHSRs and eliminate the clauses mentioned in Point-2 to optimize the capacities of storage tanks, thereby providing value to the customer.** | |
| **449** | O&M Value of the project<br><br>Volume -1 | | | | We understand that the estimate value of ₹ 686 Crores mentioned in the NIT (Portal) includes only the Design & Build cost and not the Operation & Maintenance cost. Kindly confirm.<br><br>**Query:**<br>Since, this prestigious project is voluminous in nature including a 440 MLD WTP, the O&M forms an important aspect of the project. Non-stipulation of minimum O&M percentage to be quoted by bidders can result in inadvertent errors in bidding and severe post award complications/disputes. Hence, we request you to stipulate the minimum O&M% to be quoted by the bidders. This is being presently practised in tenders across Punjab | Refer Item No. 04 Addendum No. 4 |
| **450** | Volume 2 - Employer's Requirement | 6.10.1 | 272 | General (Instrumentation Schedule) | Refer to the Instrumentation Schedule Sl. No.- VI (Automation), it is mentioned that the PLC based instrument control panel at various location and in another clause all "PLC shall be provided as a Hot-Standby configuration'.<br>In general, we don't use so many Hot-Standby PLC's in one plant.<br><br>We request you to accept that the Main Plant PLC system shall be a hot standby linked to the plant redundant SCADA system and process systems shall be | Refer Item No. 19 Addendum no. 3 |

| Sl. No | Section | Clause | Page No | Subject | Clarification Required | Response |
|---|---|---|---|---|---|---|
| | | | | | furnished with individual RIO panels or standalone PLC /controller (as per process requirement) which shall communicate with the main plant PLC for control & monitoring of plant process Please confirm. | |
| **451** | | 6.10.3.7 | 278 | Specifications for online water quality monitoring systems | In referred clause it is mentioned that the water quality monitoring will be combination of parameters like pH, Turbidity, TDS, Conductivity, Residual Chlorine, flow and Pressure, which is to be provided at WTP, Raw Water Pump House, Clear Water Pump House and OHSR as per schedule of price sub activity (Section IV, Vol I).<br><br>All above parameter are measured under water quality monitoring at inlet & outlet of the WTP.<br><br>For OHSR's, it is standard practice to measure pressure, flow and residual chlorine at the outlet only. We request that pressure, flow and residual chlorine should be measured at the outlet of the OSHR's. Please Confirm. | Provision shall remain as per Proposal Document |
| **452** | Volume 2 - Employer's Requirement | Appendix 1C (Sl. No.-6) | 65 | Valves and Electromagnetic Bulk Flow Meters | The quantities of both valves and flow meters given in the appendix-1C are not adequate quantity as requirement given in table-1.2 and table-1.3 of schedule of price sub activity (Section IV – Proposal Forms Page No. 101, Vol 1)<br><br>At present there is no payment mechanism for supply and installation of valves and flow meters. So in case the quantity of flow meter varies in future, there will be a huge financial impact on the contractor/client but still the contract value will be the same. It is a common practice in all other tenders to provide line item in BOQ for supply and installation of both valves and flow meters.<br><br>Therefore, we request that a line item shall be added in BOQ for bidders to quote the price against supply and installation of both valves and flow meters to minimize the ambiguity. | The quantity of the valves and flow meter shall be as per design and requirements of RFP. The table 1.2 and 1.3 gives indicative minimum quantity of valves and flow meters. The BOQ item is form consolidated items for complete pipeline works and is inclusive of all items.<br><br>Provision shall remain as per Proposal Document |
| **453** | Price Bid | Item rate | | pipeline crossing | At present no BOQ item is provided for transmission pipeline crossing Railway tracks, Roads, Highways, Nallah and Canal and other water bodies. It is a standard | Provision shall remain as per Proposal Document |

| Sl. No | Section | Clause | Page No | Subject | Clarification Required | Response |
|---|---|---|---|---|---|---|
| | | | | | practice to provide a line item in BOQ for horizontal direction drilling (HDD) method including setting and installing plant in all other tenders. In absence of sufficient data regarding crossings, the bidders will not be in a position to estimate relevant quantities of pipeline crossing at the bidding stage.<br><br>So we request you to provide a separate line item for crossings by indicating nos of crossings alongwith the length of crossing. | |
| **454** | Price Bid | | Item rate | provide a separate line item for earth work along with estimated quantities for earthwork | At present the transmission line item in the BOQ is inclusive of earthwork, road restoration, specials etc. In absence of sufficient data, the bidders will not be in a position to estimate relevant quantities of such works at the bidding stage.<br><br>Therefore we request you to provide a separate line item for earth work along with estimated quantities for earthwork (such as X Cum – In soft Soil, Y Cum – In soft Rock etc.).<br><br>For road restoration, the indicative quantities may be given in asphalt and concrete roads separately in Sqm.<br><br>For specials indicative quantities may be given in Kgs. | Provision shall remain as per Proposal Document |
| **455** | Volume 2 - Employer's Requirement | 118 | A 1.4.12. | Water Quality | In referred clause it's mentioned that the physical and chemical parameters recommended for analysis of water quality relevant to the project are pH, total solids, total suspended solids, total dissolved solids, COD, BOD, DO, Oil and Grease, Chloride, Iron etc. In general all these parameters are monitored in sewage treatment plant, these are not relevant in this project and shall unnecessary increase the cost of the project.<br><br>Hence, we request you to kindly delete these requirements. | Provision shall remain as per Proposal Document<br><br>Water quality of local water resources that is used by local community shall be monitored under Environmental Monitoring Plan. This required for during construction phase of the project. |
| **456** | Volume 2 - Employer's Requirement | 15 | 1.11.8 (b) | Treated water qualities | The tender has specified for the treated water qualities to conform with IS 10500.<br>The IS 10500 consists of various water parameters and treating all those parameters is beyond the scope of the present Water Treatment Plant project. Therefore, we | Provision shall remain as per Proposal Document |

| Sl. No | Section | Clause | Page No | Subject | Clarification Required | Response |
|---|---|---|---|---|---|---|
| | | | | | request you to consider 6 parameters as per enclosed annexure for which Bidder shall guarantee the treated water values as per IS 10500 specifications. The parameters mentioned in the enclosed (Annexure I) is widely adopted in WTPs across India approved by eminent Consultants and Municipal bodies. | |
| **457** | Volume 2 - Employer's Requirement | 47 | 2.2.1<br>4 (i) | Raw Water Reservoir | The tender has specified a Raw Water Reservoir of 110 ML equivalent to 6 hrs retention volume of the total plant capacity with an objective to provide storage in case of unavailability of water from canal.<br>• We understand 6 hours is not enough buffer capacity to keep the WTP running when canal water is not available.<br>• This RWR will also act as a pre-settling unit and the suspended solids and silt entering the reservoir with raw water will get deposited at the bottom of the tank and being an UGR with covered top, sludge extraction would be an extremely cumbersome and it will also affect the operation of the WTP.<br>• The canal water report suggests that Turbidity level in the canal is mostly in the range of 20 – 250 NTU which doesn't require pre-settlement of TSS before clarifier, unlike river water where turbidity shoots up to 2000 – 5000 NTU during monsoon and needs pre-settling in the upstream to reduce SS load on Clarifiers.<br>We understand there is no project specific requirement of this reservoir. Therefore, we request you to kindly delete this Raw water reservoir from the scope of this project. However, in lieu of this a raw water pump sump of 15 – 20 minutes retention shall be provided for pumping the raw water to plant inlet chamber.<br>Kindly confirm. | Raw Water Reservoir of 120 ML equivalent to 6 hours retention volume of the total plant capacity is the minimum and as per design for particles settlement time, capacity may be more.<br><br>Refer Item no. 02 Addendum 4 |
| **458** | Volume 2 - Employer's Requirement | 62 | Appendix IA | Iron and Ammonia removal | We strongly recommend Cascade Aerator upstream Clarifiers in the treatment line.<br>Cascade Aerator induces natural aeration and helps rejuvenate the water quality by keeping it free from entrapped gasses and increasing DO. | The bidder may choose appropriate aeration method including Cascade Aeration. |

| Sl. No | Section | Clause | Page No | Subject | Clarification Required | Response |
|---|---|---|---|---|---|---|
| | | | | | It also helps in removal of dissolved Iron by oxidation and eliminating Ammonia to some extent. It also improves the aesthetics of plant.<br>Cascade aerator is widely adopted in WTPs across India. The design parameters are stated below:<br>Surface loading rate: 0.03 – 0.45 $m^2/m^3/h$.<br>No of tiers: 04 (minimum)<br>Rise of each step: 0.4 m<br>Kindly confirm. | Refer Item no. 2<br>Addendum no. 4 |
| **459** | Volume 2 - Employer's Requirement | 208 | 6.6.16 | Rate of filtration | Tender has specified that, in case of constant rate filtration, the rate of filtration shall be 6 m3/m2/h.<br>All modern filters are designed for filtration rate well over 7 – 9 m/h and are successfully operating in India.<br>However, the filtration unit should not operate at greater than 110% of the total inflow in (N-1) condition when one filter is on backwash or out of service.<br>Therefore, we request Client to allow Bidder to design the filters with suitable filtration rate. However, bidder will provide document in support of proposed design Rate of Filtration along with reference of WTPs. | Refer Vol-3 and Addendums<br>Proposer may adopt proven technology, accordingly design parameters and components may change.<br><br>Provision shall remain as per Proposal Document |
| **460** | | General | | Design TSS for Sludge line design | The tender has not specified any TSS value for plant design purpose. It is imperative to define design TSS to avoid both under / over design of Sludge handling units. Therefore, we request you to kindly specify the design value for the same.<br>Normal practice adopted for sludge line design is as follows:<br>• Thickener Design – 100 mg/l<br>• Dewatering System – 50 mg/l<br>Please confirm. | Refer Vol. 2, Raw water turbidity and maximum turbidity for design is given accordingly subsequently parameter for sludge will decided and approved<br><br>Provision shall remain as per Proposal Document |
| **461** | | General | | Minimum Numbers of Process Units | We request that to maintain the uniformity in design of WTP, the client shall mention minimal nos of units for equiments required. This will ensure the best effluent output of WTP and maintain the good engineering practices. E.g.<br><br>• Flash Mixer (FM) – 2W<br>• Clarifier – 4 W<br>Filter – 16W | Refer reply to item no. 458 above.<br><br>Provision shall remain as per Proposal Document |