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<td>4 X 270 MW BHADRADRI TPS TECHNICAL SPECIFICATION FOR DM PLANT</td>
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SECTION – C1-C

FUNCTIONAL / PERFORMANCE / DEMONSTRATION GUARANTEE
The Bidder shall guarantee that the equipment offered shall meet the rating and performance requirements stipulated for various equipment covered in this specifications. The guaranteed performance parameters furnished by the bidder in his offer, shall be without any tolerance values and all margins required for instrument inaccuracies and other uncertainties shall be deemed to have been included in the guaranteed figures. The bidder shall demonstrate all the guarantees covered herein during demonstration test / PG test. The various tests which are to be carried out during demonstration tests are listed in the specification. The guarantee tests shall be conducted by the bidder at site in presence of BHEL/CUSTOMER. All costs associated with the tests shall be included in the bid price. In case during demonstration test /PG test, it is found that the equipment/system has failed to meet the guarantees, the bidder shall carry out all necessary modifications and/or replacements to make the equipment/system comply with the guaranteed requirements at no extra cost to the BHEL/CUSTOMER and re-conduct the demonstration test(s) / PG test with BHEL/CUSTOMER's consent.

I. TECHNICAL GUARANTEES

1. DM PLANT

The quality of DM water at the outlet of each mixed bed units at design flow rate shall be guaranteed as follows:

- Conductivity - < or = 0.1 micro-S/cm
- Reactive silica - < or = 0.01 ppm as SiO₂
- pH - 6.8 to 7.2

Further the following parameters need to be guaranteed by the bidder:

- Outlet of degasser units: 5 ppm CO₂

Bidder to guarantee, DM Plant including UF system outlet water flow rate of each stream and net output between regeneration for complete DMP+UF.

Activated Carbon Filter (ACF)

The quality of treated water at the outlet of each ACF at design flow rate shall be guaranteed as below:

Residual Chlorine, Colour and Organics: BDL (Below detectable limit).

Pressure sand Filter (PSF)

The quality of treated water at the outlet of each DMF at design flow rate shall be guaranteed as below:

- Suspended solids: 2ppm (Maximum).

In addition to that Vibration, parallel operation and noise level of all the pumps and blowers at the rated duty point shall be demonstrated at site for DM plant package.

ULTRA FILTRATION PLANT

UF outlet:
II. AUXILIARIES POWER CONSUMPTION GUARANTEES

Bidder to refer guaranteed auxiliary power requirement for water treatment packages drives listed on continuous basis. The total power consumption should be well within the values as mentioned below. **Bidder to include guaranteed power consumption in their bid submission in sealed envelope as per format attached in technical specification.** Auxiliary power consumption shall be used for technical loading as per mentioned criteria during bid evaluation stage.

Liquidated damages shall be applicable during demonstration / PG test at site as per rate given in below on difference between actual power consumption of drives listed and guaranteed auxiliary power consumption.

Bidder to note that guaranteed auxiliary power consumption value for station (in KW) for DM plant shall be well within the values given below:

a) **DM PLANT – 205 KW**

Drives to be considered for 2 nos. working stream of DM plant along with UF system for guaranteed auxiliary power consumption:

i. DM PLANT SUPPLY PUMPS (2 working)

ii. DEGASSED AIR BLOWER (2 working)

iii. DEGASSED WATER PUMPS (2 working)

iv. UF FEED PUMPS (2 working)

**LOADING CRITERIA FOR AUXILIARY POWER CONSUMPTION DURING BID EVALUATION STAGE**

For bid evaluation purpose on account of guaranteed auxiliary power consumption, the same shall be loaded at the rate of ₹ 2, 52,000/- per KW (Rupees Two lacs and fifty two thousand per Kilowatt) for the differential power consumption for above packages.

** LIQUIDATED DAMAGES CRITERIA FOR AUXILIARY POWER CONSUMPTION DURING DEMONSTRATION / PG TEST**

If the actual power consumption exceeds the guaranteed power consumption, liquidated damages shall be payable by the bidder at the rate of ₹ 2, 52,000/- per KW (Rupees Two lacs and fifty two thousand per Kilowatt) excess power consumption, over the base guaranteed figure as indicated by BHEL above or indicated by bidder in their bid for respective package.