

SCOPE OF WORK

10: SUPPLY OF FRP COOLING TOWER & ASSOCIATED MATERIALS

- 1) FRP cooling tower along with starter panel # 1 No.
- 2) Duplex type strainer (MOC: SS304 / SS316L) # 1 No.,
- 3) GI pipe (IS:1239 MEDIUM GRADE)
 - a. 50 NB: 30 m,
 - b. 80 NB: 60 m,
 - c. 100 NB: 30 m
- 4) Gate valve
 - a. 50 NB: 4 Pc.
 - b. 80 NB: 4 Pc.
 - c. 100 NB: 4 Pc.

Manual (Hand wheel) operated cast steel gate valve (rising spindle type) for water works Design standard: IS 10611 / BS 1414 / API 600
Class: 150, End connection: Flanged, MOC: Body & bonnet - ASTM A-216 WCB, Seat - 13% Cr, Trims - AISI 410 / 13% Cr, Gland packing & gaskets - Asbestos free
- 5) 4 # core, 4 sq. mm armoured copper cable # 150 m
- 6) Pressure gauge # 2 Nos.,
- 7) Temperature gauge # 2 Nos.

COOLING TOWER WITH STARTER PANEL

Type of CT # FRP, Modular type prefabricated, induced draft counter flow.

Water quality - Clarified water, Capacity # 45 m³/h

Designed wet-bulb temperature # 28.5 deg C

Max HOT water I/L temp to CT # 38 deg C

Range # 5 deg. C at WBT of 28.5 deg C

Available pumping head # 1.8 KSC (approx.) at base of tower.

Mounting of fan: Direct mounting on motor shaft.

Cooling tower fan motor specifications

Suggested motor rating # 5.5 ± 10% kW at 415 ± 10% V

Motor type # 3 PH, TEFC, IP-55 weatherproof.

Indicative Material of construction:

Casing # FRP, Basin - FRP, Fan cylinder - FRP, Louvers # FRP/PVC/Anodised Aluminium

Eliminators # PVC, Nozzle # Polypropylene, Fill # PVC (White colour with UV inhibitor and Fire-retardant features), All bolts # SS - 304

Fan guard # HDG steel,

Fan Blade MOC # High grade Engg. plastic

SPECIAL TERMS & CONDITIONS:

a. Period of contract # 1 year

b. deleted

- c. Completion of erection & commissioning # Within 3 months from onset of winter (Nov. # Jan.). Party may have to work in staggered manner as availability of front is weather dependent.
- d. Defect Liability: 6 months
- e. Demonstration of CT range: After 6 months from erection & commissioning of entire system as directed by EIC/NTPC representative.
- f. Interested bidders are suggested to take a site visit for proper evaluation of the proposed work before quoting.
- g. Price escalation.: Firm price contract.

NTPC SCOPE

- a. Construction Power, Water
- b. Accommodation to service engineers/ site supervisors in NTPC township quarters or guest house as per availability on chargeable basis.
- c. NTPC may provide forklift, hydra etc. for material handling, subject to availability and direction of EIC.
- d. MS structural steel only.
- e. All construction equipment # JCB, Hydra, Tractor - trolley, crane, BOT etc.

CONTRACTOR'S SCOPE

- a. Service engineers/ Technicians/OEM representatives/ Site supervisors with relevant and proper skill
- b. All manpower (Fitter, Welder, Rigger, Helper) to complete the work
- c. All T&Ps to complete the work
- d. All safety PPEs to the workers.

PAYMENT TERMS:

- a) Progressive payment on RAB basis on submission of required documents and certification of EIC.
- b) 80% of supply value against receipt and acceptance of materials at site on pro-rata basis. Balance 20% of supply shall be released after erection of materials on pro-rata basis.
- c) 100% of erection and commissioning value against completion of erection and commissioning of materials on pro-rata basis.
- d) Security deposit: As per GCC.
- e) Safety retention amount @3% of service portion of contract towards safety compliances specified in tender documents.





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