

## ANNEXURE-9

### **SODIUM SULPHATE RECOVERY NEUTRALISED $\text{Na}_2\text{SO}_4$ TO CENTRIFUGE-1 TRANSFER PUMP WITH MOTOR, BASE, ACCESSORIES & SPARES**

Type of pump	:	Horizontal Centrifugal
Duty	:	To pump aqueous solution of $\text{Na}_2\text{SO}_4$
Aqueous Solution (as dissolved Solid)	:	Dissolved salts of $\text{Na}_2\text{SO}_4$ including 46.5% $\text{Na}_2\text{SO}_4$ salt crystals in suspension
Capacity	:	15 m <sup>3</sup> /hr.
Total Discharge Head (TDH)	:	25m.
Temperature	:	80-90°C
Density of liquor	:	1.5
pH of Liquor	:	Alkaline
Viscosity (Cp)	:	10
Gland Sealing	:	Double Mechanical seal
Impeller	:	Semi-Open
Suction	:	Flooded.
NPSH available	:	11m
Particle size	:	500-3000 $\mu$

### **MATERIAL OF CONSTRUCTION**

Impeller	:	1.4474/AISI329
Wear ring/plate	:	1.4474/AISI329
Casing	:	1.4474/AISI329
Sleeve	:	CF8
Shaft	:	CF8
Non wetted part	:	CI
Base	:	MS Fabricated only.
Coupling make	:	Tyre Coupling of Unique / Fenner / Love joy.
Motor	:	Crompton greaves / Siemens/ ABB
Motor selection Margin	:	<b>Minimum 30% above brake horse power required</b>
Power rating	:	415V (+/- 10%), Class-F,IP-55 insulation, 3 Ph, 50 Hz, A.C.Supply,IE-3

## Annexure-10 A

**The offer must be submitted in the given format**

Pump model & type offered	-	
Speed of the pump	-	
Suction & discharge (mm)	-	
Type of drive	-	
Type & make of coupling	-	
Capacity offered (m <sup>3</sup> /hr)	-	
Head (m)	-	
NPSH required	-	
BKW required	-	
Motor offered make & rating	-	
Impeller type & diameter offered	-	
Full size of impeller offered	-	
Drive end bearing* No.	-	
Non drive end bearing* No.	-	
Shaft diameter at impeller end	-	
Distance between NDE bearing and impeller	-	
Distance between bearings (NDE & DE)	-	
Weight of bare pump (Kgs.)	-	
Weight of structural base (Kgs.)	-	
Weight of motor (Kgs.)	-	
Type of lubrication offered	-	
Material of construction of		
a) Casing	-	
b) Impeller	-	
c) shaft	-	
d) shaft sleeve	-	
Gland sealing arrangement	-	
Efficiency of pump		
No of stages		

\*SKF Bearing only

Pump flange shall be drilled as per ANSI 16.5

## **Annexure-10 B**

The offer must contain the following details.

1. Detail constructional drawing / sectional drawing of pump with details of bearing fitted along with leaflets.
2. G.A. drawing of pumps & motor with dimensions.
3. Dimension of pump base and associated structure.
4. Characteristics curve containing impeller size, head, efficiency, power, NPSH ® etc.
5. All the pumps should be supplied with heavy duty bearing for continuous service.
6. Coupling shall preferably be tyre coupling type of UNIQUE /FENNERMAKE. Base should be structurally fabricated. Cast base is not acceptable.
7. 12 month operational guarantee period for proper performance of pump has to be given from the date of supply of the equipment. Bank guarantee of amount equivalent to 10% of the value of the order valid for performance guarantee period will have to be submitted before the release of full payment.

**Offer without the aforesaid details will be rejected out rightly and no further communication will be entertained.**