

Name of the Work : Supply and Fixing of Steam generators for works canten - Reg.

Sl. No.	Description of item / Activity			Vendor's offer
1	Technical Details of Steam generator			
1.1	3Phase, 415V, 54 KW steam generator of Non IBR Type Standarad Make,7no's of 415V, 9KW SS Immersion heaters(Including spare heater) ,Slot to be provided for 7 No.s of heaters.Connection will be given to 6 No.s of heaters at a time.Outer body insulated with S.S cladding and stand. And the steam generator should contain the following essential features.			Vendor to confirm
	a) Tank Capacity: 300-350 Litres.	300-350Liters		Vendor to confirm
	b) Working Pressure :0.95 kg/Cm ²	As per Standards		Vendor to confirm
	c)working Temperature:	upto 100 °c		Vendor to confirm
	d) SS 316 grade (food grade) Tank of minimum wall thickness	Minimum 6mm.		Vendor to confirm
	e) with Pressure Guage, Pressure Switch, Non Return Valve(NRV),Pressure relief valve(PRV),Safety Valve,Level Guage,Blow Down Valve,Water Inlet,steam outlet etc.	Standarad Make		Vendor to confirm
1.2	Control Panel: Front operated, totally enclosed vermin proof, cubicle type panel fabricated out of 2mm thick CRCA sheet , internal wiring with required connectors, earthing lugs etc. as required housing below mentioned switchgears / meters and complete in all respects. This panel should consist of following:	MOC: SS304		Vendor to confirm
	i) 200 Amp,415V, TPN MCCB=1No.(Reputed Make like:ABB/Seimens/GE/L&T/BCH etc.)	Standarad Make		Vendor to confirm
	ii) Power Contactor of 160Amp=1No.,with suitable Auxillary contactor. (Reputed Make like:BCH/ABB/Seimens/GE /L&T etc.)	Standarad Make		Vendor to confirm
	iii) Single pole MCB of 20Amp.=24 No's, 4 Pole MCB/RCCB of 63 Amp.=2 no's.	Standarad Make		Vendor to confirm
	iv) 0-600V, Voltmeter with inbuilt S/S - 1 No.,0-100A, Ammeter with CT & inbuilt S/S - 1 No.	Standarad Make		Vendor to confirm
	v) RYB, indicating lamps of LED type and fuses - 1 Set, with ON/OFF Push button/ toggle switch .	Standarad Make		Vendor to confirm
	vi)Alarm Indicator=1no.,Water Level Indicator=1No.,Low water level alarm,Thermostat Indicator=1 No. with RTD sensor and Digital Temperarture controller with Digital Display(should switch off the generator in case of temperature overshoot automatically).Type of controller: ON/OFF	(Reputed Make like:Radix/Jumo/Honey well etc.) , Temperature sensor .RTD(PT100)		Vendor to confirm
vii)The control panel shall be provided with exhaust/ventilation fans on sides for effective cooling.	Standarad Make		Vendor to confirm	
2	Scope of Supply			
2.1	Supply of 3 Phase,415V, 54 KW steam generator of Non IBR Type Standarad Make,7no's of 415V, 9KW SS Immersion heaters(Including spare heater) Outer body insulated with S.S cladding and stand with necessary controls.	No's	3	Vendor to confirm
2.2	Supply of 4 core X 25 Sq.mm PVC Insulated flexible Copper cable of IS Standarad, with suitable cable tray of Standard Make.	R.Meters	75	Vendor to confirm

2.3	Supply of 4 core X 10 sq.mm PVC insulated flexible Copper cable with suitable cable tray of Standard Make.	R.Meters	200	Vendor to confirm	
2.4	Supply of SS pipes (316 Grade)of food grade of 1" of nominal diameter.	R.Meters	40	Vendor to confirm	
2.5	Supply of 1/2" dia asbestos rope of Standard Make.	R.Meters	400	Vendor to confirm	
2.6	Supply of 90° SS elbow 3/4 " Nominal size, Supply and fixing of 1" X 3/4" reducer ,1" SS ball valve,1" SS T Joints ,90° SS elbow 1" size etc. as per the site requirement.			Vendor to confirm	
3	Scope of Work				
3.1	Laying of 4 core X 25 Sq.mm PVC Insulated flexible Copper cable of IS Standarad, with suitable cable tray on the wall for incoming supply to the control panel.	R.Meters	75	Vendor to confirm	
3.2	Preparation of joints using suitable copper crimping type lugs for 4Core X 25 Sq.mm Copper cable and connection at required place.	No.of sets	6	Vendor to confirm	
3.3	Laying of 4 core X 10 sq.mm PVC insulated flexible Copper cable of IS Standarad with suitable cable tray for connecting control pannel and steram generator.	R.Meters	200	Vendor to confirm	
3.4	Preparation of joints using suitable copper crimping type lugs for 4Core X 10 Sq.mm Copper cable and connection at required place.	No.of sets	36	Vendor to confirm	
3.5	Fabrication and fixing of steam line at the site as per the drawing with SS 316 pipes food grade of 1" of nominal diameter.	R.Meters	40	Vendor to confirm	
3.6	Steam pipings to be insulated with 1/2" dia asbestos rope.	R.Meters	400	Vendor to confirm	
3.7	Fixing and Joining of 90° SS elbow 3/4 " Nominal size, 1" X 3/4" reducer ,1" SS ball valve,1" SS T Joints ,90° SS elbow 1" size etc.	As per the site requirement		Vendor to confirm	
3.8	Fixing of 3/4" SS check nut to connect to rice boilers , milk boiler idly plants etc.	As per the site requirement		Vendor to confirm	
3.9	Vendor shall carry out any other works not covered above but are essential to meet the steam generator working and complete the commissioning activities like plumbing works ,inlet water pipes connection etc.	As per the site requirement		Vendor to confirm	
4.0	Safety Arrangements				
4.1	Following safety features in addition to other standard safety features should be provided on the Steam generator:			Vendor to confirm	
4.2	All the cables on the Steam generator should be well supported and protected. These should not create any hindrance to operator's movement for effective use .			Vendor to confirm	
4.3	Vendor should ensure the proper earthing for the steam generator and its peripherals			Vendor to confirm	

5.0	Pre Inspection:		
5.1	Pre inspections will be carried out at suppliers works before despatch.		Vendor to confirm
6.0	Foundation :		
6.1	Vendor shall submit the preliminary layout drawing within oneweek from the date of Letter of Intent (LOI) / P.O. whichever is earlier.The layout should consist of all requirements pertaining to complete equipment including space requirement for accessories if any . BHEL will construct complete foundation for the steam generator under supervision of supplier and at supplier's responsibility. The vendor shall also indicate detailed specifications of grouting compound and Grouting procedure etc. for foundation bolts of the furnace.		Vendor to confirm
7	Erection & Commissioning and Prove Out		
7.1	Supplier to take full responsibility for carrying out the erection, start up, testing of Steam Generator, it's control & all types of other supplied equipment. The steam generator safe and sucessful operation for full load for one week should be proven out.		Vendor to confirm
8	Guarantee		
8.1	24 Months from the date of Commissioning of the Steam Generators.		Vendor to confirm
9	Reference List/Qualifying Conditions		
9.1	Only those vendors, who have supplied and commissined similar equipment of same or higher sizes for similar applications and the same is working satisfactroily for one year shall quote. The vendor shall submitted the details of the same.		Vendor to confirm
10.0	General Requirements		
10..1	The Technical bid and Price bid shall be submitted in separate sealed covers.		Vendor to confirm
10.2	The Vendor shall comply with all safety / statutory requirement existing at the time of placement of orders.		Vendor to confirm
10.3	BHEL reserves the right to Accept / Reject any offers without assigning any reason.		Vendor to confirm
10.4	All standard components shall be of renowned make. Details may be furnished in the drawings.		Vendor to confirm
10..2	suitable welding procedure to be followed for welding.		Vendor to confirm
10.5	Wherever applicable test certificates and calibration certificates shall be provided.		Vendor to confirm
10.6	The equipment shall be guaranteed for satisfactory performance for atleast 2 years from the date of commissioning at BHEL.		Vendor to confirm
10.7	Five sets of Operating Instructions & Maintenance manuals with circuit diagrams, Test Certificate and Guarantee Certificate shall be furnished along with the supply.		Vendor to confirm
10.8	Vendor shall furnish all the requested data for all the points mentioned above ,in the absence of which the offers can't be evaluated technically.		Vendor to confirm

10.9	Vendor shall submit the drawings to BHEL for approval prior to manufacture. Any deviations to the specifications to accommodate the functional aspects of the plant, reinforcements, etc. will be carried out after the approval of BHEL.		Vendor to confirm	
11	Delivery Period		Vendor to Specify	