

BHARAT HEAVY ELECTRICALS LIMITED
RAMACHANDRAPURAM : : HYDERABAD-502032
M&S-P&C DEPARTMENT

TENDER No.: M&S/P&C/2020/99, DT.:19.03.2021

WORK: "Repair/Modification of 100 kVA Stepdown Transformer for Salt bath Furnace."

ANNEXURE - I (SCOPE OF WORK)

Sl.No.	Description Of the work	Remarks
1.0	Function of Transformer 100 kVA Step down Transformer of Salt bath Furnace is using for selective hardening of various jobs. The present heating method is through Set of Electrodes immersed in crucible through Step Down transformer. The Heat Treatment salt is Neutral salt with melting point 660 1100 °C. Initially the salt is melted by shorting two electrodes through an auxiliary electrodes which acts as a resistance. During shorted condition heavy unbalanced load is experienced by Step Down Transformer , which is leading to frequent breakdown of Transformer and Tap Changer Switch(14-26V). The Maximum working temperature of the furnace is 1100 °C.	
2.0	Technical Details of the Transformer.	
	Type of Transformer : Step Down Transformer as per IS:2026.	
	Rating of Transformer : 100 KVA	
	Phases Input / output : 3 / 3	
	Frequency : 50 Hz.	
	Primary voltage : 415 Volts	
	Maximum Primary current in each phase : 139 Amps	
	Secondary Voltages : 14 to 26 Volts in minimum 6 Steps	
	Dry or oil Immersed : Oil Immersed	
	Indoor or Outdoor : Indoor Mounted	
	Type of cooling : Natural Cooling (Atmosphere).	
	Tappings : Three main fixed tapping and minimum Six variable Tappings on Primary side to get 14 to 26 Volts in Secondary side.	
3.0	Method of earthing : Neutral earthed system on the Transformer.	
	Load Condition : Initially unbalance load. i.e., between two phases of Secondary side auxiliary electrode will be connected to melt the heat treatment salt.	
	Connection : Primary side through cable Secondary side through Copper bus bar from the top surface of the transformer , gap to be maintained between phases as per the existing set up for fixing Furnace electrodes.	
	Secondary side connection : Copper bus bar flats are to be provided.	
	Activities to be carried out by Vendors	
	i) Repair and rewinding of Primary and secondary windings of the stepdown transformer.	
	ii) Supply and fixing of the new suitable OFF load tap changer switch	
	iii) Dismantling ,cleaning , Varnishing and Re assembling of the T/F core .	
4.0	iv) Repair and painting of transformer oil tank and leakage test to be conducted.	
	v) Supply ,filtration and filling of new transformer oil.	
	vi) No load test to be carried out at vendors works in presence of BHEL personnel.	
	vii) Any other activities , which has to be carried out for successful repair of the transformer and not mentioned above shall be carried out.	
5.0	Vendor may visit/ discuss / contact BHEL before submitting the offer.	
6.0	BHEL representatives will inspect the Transformer at Supplier's works before despatch.	
7.0	Fixing & prove out the Step down transformer at BHEL works as per specification is vendor's responsibility.	
8.0	Guarantee : The Transformer shall be guaranteed for trouble free operation for a period of at least one year from the date of its repair acceptance by BHEL.	
9.0	Scrap generated during repair of transformer shall be considered for arriving at rate while submitting the offer, since BHEL will not take back the scrap.	

SIGNATURE AND SEAL OF CONTRACTOR