

**DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING  
NATIONAL INSTITUTE OF TECHNOLOGY: TIRUCHIRAPPALLI - 620 015**

27.12.2013

**Minutes of the Pre-Bid conference**

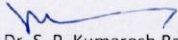
**Tender Notification No.: NITT /F.NO: 020/UG LAB MODERNISATION/PLAN 2013-2014/MME**

The pre-bid conference was held on 27.12.2013 at 10.00 am. in the committee room of MME to discuss the specification published in the tender. All other terms and conditions mentioned in the tender document remains same.

Based on the discussion, the committee recommends the following amendments to the specification.

**Specification for Vacuum Electric Arc Furnace**

Original tender specification		Amended specification
ITEM	SPECIFICATIONS	Amended specification
<b>Vacuum Electric Arc Furnace</b>	A Metal bell jar of dia 300mm and 350mm long both end open fixed with top and bottom flange with L gaskets acts as furnace chamber. The top flange houses the electrode assembly with bellow etc, and the bottom flange is water cooled containing the crucible for the material to be melted. It should have at least couple of viewing ports.	Stainless Steel Box type chamber with front loading type. Water cooled channels/pipes for water circulation should be provided. 2 nos. of additional ports should be provided for future construction. A suitable support steel frames should be provided. Pressure relief valve should be provided.
	A high vacuum pumping system with suitable vacuum pump, Liquid Trap, Valves, SS plumbing line and vacuum measuring gauges to evacuate the chamber in the range of $10^{-4}$ mbar and back filled with Argon gas to required pressure for melting.	Diffusion Pump based Vacuum system ultimate $10^{-6}$ mBar range and working $10^{-4}$ m Bar range. PLC controlled system for all vacuum operations.
	High current DC power supply with saturated core transformer and rectifier diode etc.	600 Amps DC power supply with open circuit potential of 70V and closed circuit voltage of 20- 40V .Potentiometer has to be provided for controlling the current rate manually.
	a. 300 Amps current capacity with open circuit voltage of 70 V	Make preferred Mogra Cosmic or Ador
	b. Arc voltage in the range of 20 to 40 Volts DC.	No amendments
	All the items are mounted on a steel frame fitted with caster wheel etc.	No amendments
	Controls and safe interlocks for smooth operation of the system	No amendments
	After melting the pouring should be in user friendly manner	or any other user friendly sample extractive method
	<b>Spares</b>	No amendments
	Spares for Rotary Vacuum Pump and System like O'rings, Gasket, Oil Seals, valves, valves rings, etc.	No amendments
Copper crucibles rod shaped hearth – 1; button shaped hearth - 1	Copper crucible ETP grade capacity 20 to 30 gms -1No. Capacity 200 gms 1No. Chiller unit of 50 TR to 100 TR of standard make is to provided with mechanical/electrical accessories	
Electrical spares	Two optical pyrometers measuring upto 3000°C is to provided and other necessary electrical & mechanical spare also to be provided.	

  
 Dr. S. P. Kumaresh Babu  
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