NTPC LTD

CC-OS

EOC NOIDA

Sub: Qualifying Requirement for Vendor Enlistment for supply of Crusher Hammers (Cast)

A)	MEG DETAILS		
	1.0	MEG NO.	55MEC-06
	2.0	MEG DESCRIPTION	Crusher Hammers (Cast)
	3.0	RESPONSIBILITY CENTRE	CC
B)	**Technical Criteria of QR:** 1. The applicant should be a manufacturer of Manganese Steel Cast Crusher Hammers for Ring Granulators as per IS:276 or material as specified in the Technical Specification. 2. The applicant should have its own Heat Treatment facility. 3. The applicant should have testing facilities including Spectrometer as required in NTPC Standard Quality Plan attached with the Technical Specification.		
C)	**Other Documents to be submitted**: In addition to the documents required in support of meeting technical requirements as stated above, following documents are required to be submitted by the Applicants applying for enlistment:- 1. Three POs of the highest executed values of similar work during previous five years from the date of application. Copy of Invoice / Completion certificate from the concerned buyer/s in support of successful execution of supply against the POs to be submitted. 2. Audited balance sheet including Profit & Loss statement for the previous three completed financial years reckoned from the date of application. In case the audited documents are not ready / available, then certified copy by a registered practicing Chartered accountant may be submitted. 3. Latest annual report OR NSIC / SSI / MSME registration certificate / BIS license / ISO certificate / Certificate of registration from the concerned excise department / any other statutory document as a proof of being manufacturer of the required material. 4. Any other documents in addition to the above which the applicant wants to submit.		
D)	NOTE-1	Similar works means: Supply of Cast Hammers each of minimum 12 Kg Mass to Thermal Power Plants or CHP main package Contractors or OEM of Ring Granulators in last 5 years from the date of application for enlistment	
	NOTE-2	The executed value means Basic value of quantity of similar works executed/supplied against the reference PO(also applicable to partly executed POs as on date of application).Where PO value is composite(i.e. including Taxes etc.),the applicant to give item-wise break-up of Composite PO value mentioning Basic Value, Taxes etc.	

NTPC LTD

CC-OS

EOC NOIDA

Sub: Technical Specifications for Vendor Enlistment for supply of Crusher Hammers (Cast)

A)	MEG DETAILS		
	1.0	MEG NO.	55MEC-06
	2.0	MEG DESCRIPTION	Crusher Hammers (Cast)
	3.0	RESPONSIBILITY CENTRE	CC
B)	**Technical Specifications:** As per attached Annexure		

Item : Cast Hammer for Ring Granulator

Sl	Description
01	a) The Codes and Standards – IS 276: 2000 Grade- 3 b) Additional requirement as specified below.
02	Hammers to be manufactured as per attached drawings (to be attached by the respective NTPC site.)
03	Chemical composition of casting should be as follows: a. C - 1.050 - 1.35 (%) b. Si - 1.0 (%) Max c. Mn - 11.5 - 14.0 (%) d. P - 0.08 (%) Max e. S - 0.025 (%) Max f. Cr - 1.5 - 2.5(%) g. Cu - 0.2 – 0.3 (%) h. Ti - 0.06 – 0.1 (%) g. Minimum ratio of Manganese to Carbon (10:1)
04	Mechanical Properties (bend test and hardness) of the Casting should be as Per IS 276: 2000 Grade-3.
05	Drop Test to be carried out as per procedure mentioned in Standard Quality Plan
06	Tolerance on the dimensions shall be as per attached drawing. In case tolerance not specified in attached drawings same shall be as per IS 276:2000 Clause-9.2 i.e as per IS 4897 class-2.
07	Tolerance in weight of hammer should be within +/-2%.
08	Repair by welding is not permitted.
09	Marking shall be as per IS 276:2000. Weight of the hammer shall be punched on each hammer.
10	Testing as per attached Standard quality plan (0000-999-QOM-S-067 Rev 0 dt 6/12/2013)

एनटीपीसी NTPC	ITEM (MATERIAL, CLASS, GRADE, RATING, RANGE, SIZE ETC.) **CRUSHER HAMMER (RING HAMMER / TOOTHED RING HAMMER)**	**STANDARD QUALITY PLAN** **CONFORMING TO CODE: AS PER TECHNICAL SPECIFICATION / IS 276-2000**	QP NO.: 0000-999-QOM-S-067 REV. NO: 00 DATE : 06.12.2013 PAGE 1 OF 2 *VALID UPTO :* 05.12.2015	REVIEWED BY: ANKUSH BIRLA RAJEEV GARG A K JHA	APPROVED BY: अनुमोदित Approved Dt..... J GOWRISHANKAR

Sl. No	Component & Operations	Characteristics	Class	Type of Check	Quantum of Check		Reference Document	Acceptance Norms	Format of Record	D*	Agency			Remarks
					M	C/ N.					M	C	N	
1.	2.	3.	4.	5.	6.		7.	8.	9.		** 10.			11.
1.0	**IN-PROCESS INSPECTION**													
1.1	Casting of Crusher Hammer and Test bar	Chemical Composition	Major	Chemical Analysis	One Sample / Heat	One Sample / Heat	Relevant Material Specification as per Approved Drg/ Data Sheet/ Tech. Spec.		Test Report	√	P	V	V	See Note – 1
		Heat Treatment	Critical	Time and Temp.	100%	100%	Manufacturer's Plant Standard to attain required Mech. Properties		HT Chart	√	P	V	V	
		Bend Test on Test Bar.	Critical	Mech. Test	One Sample / Heat & HT Batch	One Sample / Heat & HT Batch	Relevant Material Specification as per Approved Drg/ Data Sheet/ Tech. Spec.		Test Report	√	P	V	V	
1.2	Crusher Hammer Castings	Surface Defects & Marking	Major	Visual	100%	100%	Relevant Material Specification / Approved Drg/ Data Sheet/ Tech. Spec.		IR	√	P	V	V	See Note – 1& 2
		Dimensions	Major	Go, No-Go gauge Check	100%	100%			IR	√	P	V	V	See Note – 3
		Weight	Critical	Measurement	100%	100%			IR	√	P	V	V	See Note – 3 & 4
		Hardness	Critical	Hardness Check	Min. 10% / Heat & HT Batch	Min. 10% / Heat & HT Batch			Test Report	√	P	V	V	
2.0	**Final Inspection**													
2.1	Finished Crusher Hammers	Surface Defects, Marking & Dimensions	Major	Visual & Measurement	Random 5% of offered lot	Random 5% of offered lot	Relevant Material Specification / Approved Drg/ Data Sheet/ Tech. Spec.		IR	√	P	W	W	See Note – 1, 2 & 3
		Chemical Composition	Major	Chemical Analysis	One Sample / Heat	One Sample / Heat			Test Report	√	P	W	W	See Note - 5
		Material Grade Analysis for % Mn Composition	Critical	% Mn Chemical Analysis	Random 5 % of offered Lot	Random 5 % of offered Lot			IR	√	P	W	W	
		Bend Test of Test Bar	Critical	Bend Test	One Sample / Heat & HT Batch	One Sample / Heat & HT Batch			Test Report	√	P	W	W	

LEGEND: * RECORDS, INDENTIFIED WITH "TICK" (√) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION.
** **M:** MANUFACTURER / SUB-SUPPLIER **C:** MAIN SUPPLIER, **N:** NTPC **P:** PERFORM **W:** WITNESS AND **V:** VERIFICATION. AS APPROPRIATE, CHP: NTPC SHALL IDENTIFY IN COLUM "N" AS 'W'.

NTPC	ITEM (MATERIAL, CLASS, GRADE, RATING, RANGE, SIZE ETC.) **CRUSHER HAMMER (RING HAMMER / TOOTHED RING HAMMER)**	**STANDARD QUALITY PLAN** **CONFORMING TO CODE: AS PER TECHNICAL SPECIFICATION / IS 276-2000**	QP NO.: 0000-999-QOM-S-067 REV. NO: 00 DATE : 06.12.2013 PAGE 2 OF 2 *VALID UPTO :* 05.12.2015	REVIEWED BY: ANKUSH BIRLA RAJEEV GARG A K JHA	APPROVED BY: Approved Dt..... I GOWRISHANKAR

Sl. No	Component & Operations	Characteristics	Class	Type of Check	Quantum of Check		Reference Document	Acceptance Norms	Format of Record		Agency			Remarks
					M	C/ N					M	C	N	
1.	2.	3.	4.	5.	6.		7.	8.	9.	D*	** 10.			11.
		Hardness	Critical	Hardness Check	Random 5% of offered lot	Random 5% of offered lot	Relevant Material Specification as per Approved Drg/ Data Sheet/ Tech. Spec.		Test Report	√	P	W	W	See Note - 7
		Weight	Critical	Measurement	Random 5% of offered lot	Random 5% of offered lot	Approved Drg/ Data Sheet/ Tech. Spec.		IR	√	P	W	W	See Note - 3 & 4
		Drop Test	Critical	Drop Test	Random 1% of offered lot	Random 1% of offered lot	See Note - 6		Test Report	√	P	W	W	

NOTE: -

1. Since these are bulk manufactured castings, integral test bars are not feasible. "As Cast" Heat Number and Manufacturer's Name shall be clearly visible on each Casting as well as on the Test Bar.
2. Castings should be properly fettled and dressed before inspection. Risers / Runners shall not be removed by gas cutting. Surface Cracks & Pitting visible to naked eye, are not acceptable.
3. Dimensions and Weight variation shall be as per IS: 4897 Class-2 or as per Approved Drg./ Data Sheet/ Tech. Spec. requirements.
4. Weight of Hammer Casting will be punched on each Casting.
5. Hammer Castings used in Drop Test **are not to be supplied** and are to be **destroyed** in presence of NTPC. As far as possible, Samples for witness of Chemical Test shall be drawn from Hammer Castings used in Drop Test. Balance Samples for witness of Chemical Test for the Heat not covered in Drop Test, shall be taken from Test Bars.
6. Drop Test : The Hammer Casting shall be kept with it's axis in horizontal position, over a steel plate. A dead weight of **not less than 100 Kg** shall be dropped on the casting, from **not less than 3 meter height.** Any Crack or Chip off is not acceptable. Further, any Significant variation in dimensions is also not acceptable. In case of failure of the first sample, two more samples, for each failed sample, from the same lot, shall be subjected to the drop test. In case of failure in retest, **the entire lot shall be rejected**.
7. Hardness shall be measured by Digital Hardness Tester.
8. No weld repair on hammer castings is acceptable.
9. The Hammer Castings, which are subjected to Visual & Dimensional/ Material Grade Analysis/ Weight Check/ Hardness Check by NTPC, shall be identified by NTPC Inspection Stamp.
10. Manufacturer shall ensure proper Surface Protection on the Castings, prior to dispatch.

LEGEND: * RECORDS, INDENTIFIED WITH "TICK" (√) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION
** **M:** MANUFACTURER / SUB-SUPPLIER C: MAIN SUPPLIER, N: NTPC P: PERFORM W: WITNESS AND V: VERIFICATION. AS APPROPRIATE,
CHP: NTPC SHALL IDENTIFY IN COLUM "N" AS 'W'