

NTPC LTD

CC-OS

EOC NOIDA

Sub: Qualifying Requirement for Vendor Enlistment for supply of Forged Crusher Hammers

A)	MEG DETAILS		
	1.0	MEG NO.	55MEC-08
	2.0	MEG DESCRIPTION	Forged Crusher Hammers
	3.0	RESPONSIBILITY CENTRE	CC
B)	<p>Technical Criteria of QR: Applicant has to meet either Option-1 or Option-2 or Option-3</p> <p>Option-1 1. (a) Applicant should be a manufacturer of Forgings of minimum 12kg each (b) Should have supplied forged hammer for coal crushing application</p> <p>Option-2 (a) Applicant should be an OEM of Ring Granulators (b) Applicant should have supplied Forged Hammers for Ring Granulators for Coal Crushing applications.</p> <p>Option-3 1. Applicant should be a Manufacturer of Alloy Steel used for Forgings 2. Applicant should have tie up for supply of alloy steel to a Forging Manufacturer who in turn has supplied Forged Hammers for Coal Crushing Application.</p>		
C)	<p>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:-</p> <ol style="list-style-type: none"> 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. 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. 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. Any other documents in addition to the above which the applicant wants to submit. 		
D)	NOTE-1	<p>Similar works means: For Option-1 and 2: Supply of Forged Hammers for coal crushing application by the applicant. For Option-3: Supply of Forged Hammers by the forging manufacturer for coal crushing application.</p>	
	NOTE-2	<p>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.</p>	

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Sub: Technical Specifications for Vendor Enlistment for supply of Forged Crusher Hammers

A)	MEG DETAILS		
	1.0	MEG NO.	55MEC-08
	2.0	MEG DESCRIPTION	Forged Crusher Hammers
	3.0	RESPONSIBILITY CENTRE	CC
B)	Technical Specifications: As per attached annexure below		



A. Description of Item

Forged Hammers as per attached drawings (to be attached by the respective NTPC site.)

B. Application

To be used in Ring Granulators / Coal Crushers where 4 rows of crusher hammers mounted on suspension bars are used to crush coal.

C. Data Proposed for Crusher Hammer

- (i) Applicable Standard : ASTM-A322 grade 9260 steel
- (ii) Additional requirement as specified below.
 - a) Chemical Composition – As per Table-I of ASTM-A322 grade 9260
 - b) Hardness value : 302 – 352 BHN
 - c) Impact Energy Value, 2 mm, U notch: 2.50 Kgm minimum

D. Ultrasonic testing: 100 % will be carried out at steel mill as per ASTM A 388, and acceptance norm: Defect indication equal to or larger than the indication from the 4 mm Flat Bottom Hole (FBH) is not acceptable.

E. Micro structural Analysis: Forged quality steel with uniformity and Homogeneity in the structure “with tempered Martensite”

F. Indicative heat treatment process

- a) Normalizing: 850-880°C,
- b) Hardening : 840-870°C, Oil Quench
- c) Tempering : 560- 620°C,
- d) Double Tempering: 560 – 620 °C


G. Weight of each hammer

As per Drawing, (Permissible variation in weight $\pm 2\%$.)Weight of the hammer shall be punched /marked on each hammer.

H. Dimensions & Tolerances : As per attached drawing

I. Testing : As per Standard Quality Plan (No. to be written)

Handwritten signatures and initials

एनटीपीसी NTPC	ITEM (MATERIAL, CLASS, GRADE, RATING, RANGE, SIZE ETC.)	STANDARD QUALITY PLAN				QP NO.: 0000-999-QOM-S- 087	REVIEWED BY: U SUDEEP	
	FORGED HAMMER (FOR RING GRANULATORS /COAL CRUSHERS)	CONFORMING TO CODE: AS PER TECHNICAL SPECIFICATION(CONFORMING TO ASTM A 322)				REV. NO: 00 DATE : 10/12/2014	RATEEN GARG	
					PAGE 1 OF 1		A.K.JHA	
					VALID UPTO : 09/12/2017			

Sl. No	Component & Operations	Characteristics	Class	Type of Check	Quantum of Check		Reference Document	Acceptance Norms	Format of Record		Agency			Remarks		
					M	C/N			D*	M	C	N				
1.	2.	3.	4.	5.	6.		7.	8.	9.	D*	** 10.			11.		
1.0	RAW MATERIAL															
1.1	Raw material for Crusher Hammer	Chemical Composition	Major	Chemical Analysis	One Sample / Heat	One Sample / Heat	Technical Specification	Test Report	√	P	V	V	See Note - 1			
		Internal Defects	Critical	Ultrasonic Test.	100%	100%	Technical Specification	UT Report	√	P	V	V				
2.0	IN-PROCESS INSPECTION															
2.1	Heat Treatment Cycle	Time & Temperature	Major	Verification	100%	100%	Technical Specification	HT Chart	√	P	V	V	See Note - 2			
3.0	FINAL INSPECTION															
3.1	Finished Crusher Hammers	Chemical Composition	Critical	Chemical Analysis	One Sample / Heat	One Sample / Heat	Technical Specification	Test Report	√	P	W	W				
		Hardness	Critical	Measurement	100%	1 sample /Heat/HT Batch	ASTM E 10	Tech Spec	IR	√	P	W	W			
		Impact Strength	Critical	Impact test	100%	1 sample /Heat/HT Batch	Random 1% of offered lot	ASTM E 23	Tech Spec	Test Report	√	P	W	W		
		Micro Analysis	Critical	Etching	100%	1 sample /Heat/HT Batch	1 sample /Heat/HT Batch	ASTM E 407	Tech Spec	IR	√	P	W	W		
		Surface defects & Near surface defects	Major	MPI	100%	100%	Random 1% of offered lot	ASTM A 275/ E 709	No Linear Indications	MPI Report	√	P	W	W		
		Weight	Major	Measurement	100%	100%	Random 5% of offered lot	Approved Drg/ Data Sheet/ Tech. Spec.		IR	√	P	W	W		
		Surface Defects, Marking & Dimensions	Major	Visual& Measurement	100%	100%	Random 5% of offered lot	Approved Drg/ Data Sheet/ Tech. Spec.		IR	√	P	W	W	See Note - 3 & Note - 5	

NOTE: -

- Heat Number & Heat Treatment Batch no after forging shall be formed / punched on each hammer.
- The Technical Specification provides indicative Heat Treatment procedure, based on NTPC experience. However, manufacturer is free to decide his own Heat Treatment procedure to obtain the desired Micro Structure as per Technical Specification.
- Surface Cracks, dent marks, scratches visible to naked eye, are not acceptable. No weld repair on hammer forgings is acceptable.
- Manufacturer to offer extra hammers so that samples can be drawn for carrying out destructive test.
- The Hammer forgings, which are subjected to NTPC Inspection, shall be identified by NTPC Inspection Stamp. Weight of Hammer will be punched/Marked on each Hammer.
- Manufacturer shall ensure proper Surface Protection on the Hammers prior to dispatch.

LEGEND: * RECORDS, IDENTIFIED 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 COLUMN "N" AS "W".