

## **CORRIGENDUM**

*Further to tender published on 25.05.2025 on NIC portal vide Tender ID: 2025\_BHEL\_47727\_1, following corrigendum is issued:*

- 1. The tender is extended 31.05.2025.***
- 2. Revised PQR (as attached) shall be applicable.***
- 3. EMD & Performance security are waived off.***

## Technical Pre - Qualification Requirements:

## Procurement of Finish machined H. P. Inner Casing with stelliting (01050230600) of 800 MW Steam Turbine

Bidder to fill in response against Sl. No. 1. For Sl. No. 2, 3, 4 of PQR – respective manufacturer alongwith bidder to provide point wise confirmation and data with relevant document along with their offer.

Sl. No.	Qualification requirement	Documents to be submitted	Bidder's response
1	<p><b>Bidder's Role: The bidder can be any one of the following:</b></p> <p>(a) A company having both casting manufacturing (i.e., in-house moulding and pouring facility) and precision machining facility. Stelliting operation can be done either in-house or through outsourcing.</p> <p>(b) A Casting Manufacturer (a company having in-house moulding and pouring facility) with tie-up with a company having Precision Machining Facility. Stelliting operation can be done either in-house or through outsourcing.</p> <p>(c) A company having precision machining facility with a tie-up with a casting manufacturer. Stelliting operation can be done either in-house or through outsourcing.</p>	<p>Bidder must specify the role (tick whichever is applicable)</p> <p>1a <input type="checkbox"/> 1b <input type="checkbox"/></p> <p>1c <input type="checkbox"/></p> <p>Bidder to provide relevant agreements with the casting manufacturer and/or company having Precision Machining Facility and/or stelliting source (as applicable).</p>	
2	<b>Pre-qualification requirement for a casting manufacturer (in role of the bidder and/or a tie-up partner of bidder):</b>		
2a	Casting manufacturer must have successfully manufactured and supplied at least one steel casting in material grade GX12CrMoVNbN9-1 or GX12CrMoVNbN10-1-1 or equivalent/higher steel grade with weight (single piece without any fabrication) at least 16 MT in last 10 years from date of tender issue.	<ol style="list-style-type: none"> <li>1. Purchase order copy along with invoice copy for supply of casting satisfying the given criteria.</li> <li>2. Test certificates of castings supplied meeting criteria mentioned. The TC must contain details of chemical composition, mechanical properties, NDT and heat treatment.</li> <li>3. Any document corroborating the weight of casting supplied</li> </ol>	
2b	Casting manufacturer to submit a certificate from its customer for successful performance of supplied castings in grade GX12CrMoVNbN9-1, used for application temperature $\geq 500^{\circ}\text{C}$ , for a minimum period of 5 years. In absence of performance feedback, creep rupture data for minimum 1000 hours at temperature of $600^{\circ}\text{C}$ and stress 150MPa or equivalent parameter is to be submitted.	Performance feedback / Creep rupture data, if available, to be submitted.	
2c	In case of non-availability of performance feedback / creep rupture data as required in 2b, casting manufacturer has to agree to carry out creep rupture test on identified sample identified from ordered casting for minimum 1000 hours at a temperature $600^{\circ}\text{C}$ and stress	Casting manufacturer to agree and confirm.	

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	150MPa at any NABL accredited lab. Dispatch clearance shall be subjected to successful creep test.		
2d	Casting manufacturer must have adequate in-house melting, moulding and handling facilities for manufacturing of castings enquired.	Details of in-house facility for melting, moulding and handling of castings.	
2e	Casting manufacturer to confirm that they have in-house rough machining and heat treatment facilities or the same is to be outsourced. Outsourcing is permitted to be done by casting manufacturer only.	In-house facility Details to be submitted. In case of outsourcing, details of outsourcing agency along with its facilities to be submitted	
2f	Casting manufacturer to confirm that they have all testing facility (in house / outsourced) to carry out testing as per applicable casting drawing and specifications. In case of outsourcing of any testing, same to be got done through NABL/ILAC accredited lab. Outsourcing is permitted to be done by casting manufacturer only.	Casting manufacturer to confirm	
2g	Enquiry casting is required to be manufactured as per drawing and specifications (with all cross-referred standards) provided with enquiry.	Casting manufacturer to confirm	
3	<b>Pre-qualification requirement for a company having precision machining facility (in role of the bidder and/or a tie-up partner of bidder):</b>		
3a	<p><b>Machining experience:</b> The company having precision machining facility must have experience of machining large castings/ forging / fabricated components in last 10 years from date of tender issue, complying following parameters:</p> <p><b>A) Experience of Turning operations with following parameters:</b></p> <ol style="list-style-type: none"> <li>Job Inner Dia. 1225 or more.</li> <li>Surface finish value Ra 3.2 µm or better.</li> <li>Run-out values 0.02mm or better.</li> </ol> <p><b>(B) Experience of machining Joint Plane / Face on Horizontal Boring machine with following parameters:</b></p> <ol style="list-style-type: none"> <li>Machine Face Size – 3315 mm x 1600 mm or more.</li> <li>Face Run out - 0.05mm or better.</li> <li>Surface finish of Ra 1.6 µm or better.</li> </ol> <p>These Horizontal Boring operations can also be done on suitable Gantry Milling Machine. Machining company to provide the details.</p>	<p>i) PO copy(ies) of job orders fulfilling the requirement of specified in Point No. A &amp; B.</p> <p>ii) Acceptance of the machining work of above PO(s) in form of either inspection certificate(s) duly accepted/ certified by customer/its Third-Party Inspector. The inspection certificate(s) should cover all parameters as specified in (A) and (B). The drawing of the component machined may also be submitted.</p>	

Sl. No.	Qualification requirement	Documents to be submitted	Bidder's response
	Above experiences requirements (A & B) can be covered in a single job or in multiple jobs. Documentary proof of above to be submitted accordingly with their offer.		
3b	The company having precision machining facility should have following facilities (as described in 3b(i), (ii), (iii) installed & operational at their works for carrying out machining of the enquiry component.  Company having machining facility to confirm that machines are available at their works & are in good working condition with capability of achieving accuracies, surface finish & tolerances as per drawing requirements.	Machining company to confirm.	
3b(i)	<b>Turning / Vertical Boring Operation:-</b> CNC Vertical Boring Machine, suitable for Vertical Boring of HP Inner Casing as per drawing & T.R.'s requirement. Machine Requirement: (a) Table diameter of machine = 2500 mm or more. (b) Maximum Turning Height of job = 3500 mm or more. (c) Ram Stroke = 2800 mm or more (d) Weight capacity of machine = 45 Tons or more.	(a) Machining company to confirm. (b) Machining company to provide machine details / specification for referred operation. (c) Machining accuracy details and its supporting documents to be submitted.	
3b(ii)	<b>Horizontal Boring work:-</b> a. Machining company must have suitable CNC Horizontal Boring machine with suitable attachments for machining of different details, holes, Threaded holes, Slots etc. as per Drg. and TDC. Required Machine details as below : I. X-Axis : 4000 mm or more. II. Y-Axis : 3500 mm or more. III. Table Size : 3000 mm x 3000 mm or more IV. Table Weight Capacity – 45 Ton or more equipped with CNC Facing & Boring Head.  b. Machining company must have suitable machine for drilling of 4 Nos. deep holes Dia. 65 as per details specified in Drg. SEC-XB & SEC- XC-XC.	(a) Machining company to confirm. (b) Machining company to provide machine details / specification for referred operation. (c) Machining company to provide machine accuracies details and its supporting documents.  Machining company to confirm and provide machine details and provide drilling facility details.	
3b(iii)	<b>Fitting work:-</b> Machining company must have suitable facility / arrangement for different fitting / assembly works to be done as per drawing & TR.	Machining company to confirm.	
3c	Machining company must have suitable tooling / facility such as Marking Table / Machine Bed etc. in good working condition, to facilitate marking / transfer marking of job (as Material Code: <b>W90310502276</b>	Machining company to confirm.	

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	required). Machining company must have suitable facility for lifting / handling the subject job.		
3d	Machining company must have suitable facility for lifting / handling the subject job. I. Big Hook Capacity = 45 Tons or more, <i>along with suitable auxiliary hook.</i>	Machining company to confirm.	
3e	The machining company must have adequate inspection facility suited to inspect fully machined casting	Machining company to confirm and submit details of inspection facilities	
3f	Machining company to note that all tools, measuring equipments, technological items etc. required for manufacturing of subject item shall be arranged by them, in case of order.	Machining company to confirm.	
3g	Machining company to confirm that all the dimensions, accuracies & surface finish of the component shall be met as per Technical Requirements, drawings and TDC.	Machining company to confirm.	
3h	BHEL reserves the right to verify the information provided by Machining company. BHEL may also visit Machining company works if so desired by BHEL. In case, the information provided by Machining company is found to be false/ incorrect, the offer shall be rejected.	Machining company to confirm.	
4	<b>Pre-qualification requirement for a company having stellinging facility:</b>		
4a	The stellinging firm must have experience of carrying out hardfacing using <b>mechanized arc welding</b> (SMAW, GMAW, SAW, GTAW, PTAW) with filler material of Stellite 21 (CoCr-E)/ Stellite 6 (CoCr-A) / Stellite 12 (CoCr-B) / Alloy 625 (Inconel 625) over base material of high alloy steel, for e.g., X22CrMoV12-1, X10CrMoVNb9-1, X12CrMoWVNbN10-1-1, X19CrMoVNbN11-1, X13CrMoCoVNB9-2-1, GX10CrMoVNb9-1, GX12CrMoWVNbN10-1-1, etc.	Valid WPS & PQR (Performance Qualification Record) developed by the stellinging firm for the specified filler material-base metal combination, duly endorsed by third party inspector.	
4b	Stellinging firm to confirm that they have adequate in-house facility for hardfacing: <b>mechanized arc welding machine</b> (SMAW / GMAW / SAW / GTAW / PTAW) and furnace (capable of temperature of 800 deg C or above) for heat treatment/PWHT to suit the job.  To establish capability of carrying out hard-facing welding in narrow groove, stellinging firm to carry out the mock-up of welding on small Carbon steel test piece having same welding groove as of HP Inner Casing.	Stellinging firm to confirm adequacy of equipment and also provide details of arc welding and heat treatment/PWHT facility (size, maximum operating temperature, etc) to be submitted.  Photograph/video of mock-up trial to be submitted. BHEL reserves the right to verify the manufacturing facilities and above welding trial at the stellinging firm works.	

Sl. No.	Qualification requirement	Documents to be submitted	Bidder's response
4c	Stelliting Firm must have either in-house facilities or outsourced through NABL accredited laboratory for carrying out hardness and DP test as per specification.	Stelliting firm to confirm	
4d	In case of order placement and before start of work on actual job, stelliting firm to submit following documents for approval of BHEL:  Applicable WPS (Welding Procedure Specification), PQR (Performance Qualification Record) & WPQ (Welder Performance Qualification) as per enquired jobs, duly approved by third party inspector.  All testing required in WPS/PQR qualification should be got done through NABL accredited laboratory only.	Stelliting firm to confirm for submission of document after placement of order.	
4e	The firm must confirm to carry out stelliting as per enquiry specification and drawing without any deviation	Stelliting firm to confirm	

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