PRE-QUALIFYING CRITERIA FOR PROCUREMENT OF ST ROTOR FORGING:

Enquiry No.

Scope of supply:

Supply of steam turbine rotor forging shall be as per the following applicable documents.

a) Rotor Forging as per drawing no. mentioned in the enquiry.
b) Weight / size of rotor forging (in rough machined condition as per above Drawing No.)
c) Material specification HY19473 Rev. 04
d) Manufacturing and Inspection sequencing plan standard: HY 0652099, Rev. 00
e) Supply condition as per HY19473 Rev 04 & Ordering drawing
f) Applicable NDT standard: AA0850106, Rev. 01
g) Mechanical test standard: ASTM A 370 or any equivalent National or International standard (latest version)
h) Residual Stress Measurement standard: AA0850150 Rev 00
i) Thermal Stability Test standard: AA0850151 Rev 02 or AA0850152 Rev 00
j) QA plan Ref: BHEL/HY19473 Rev. 04 (with additional tests as per this PQC)

Pre-Qualification Criteria is as follows:

A. Manufacturing and Test Facilities:

Vendor shall have following in-house manufacturing & testing facilities for the manufacture of turbine rotor forgings, as a minimum requirement,

a) Steel melting including refining facility.
b) Forging press with required capacity
c) Vertical heat treatment facility for rotor (Indicating max dia & length)
d) Testing Facilities like Mechanical, UT, MPI, etc.

In addition to above in-house facilities, vendor shall also have the following facilities like Thermal stability facility at temperature ≥ 660° C, Axial core trepanning facility & Machining as per enquiry drawing and specification. (These processes can be outsourced to competent agencies and details of their facility at outsourced agencies to be submitted).

Vendor has to submit filled annexure 1 for in house manufacturing and testing facilities.

B. Manufacturing Experience:

B.1 Vendor must have supplied minimum three rotor forgings for Steam Turbines applications and is to be furnished in the format given below.

SI.NO	Purchase order number /customer details	Material Grade	Dimension: diameter (max) & length	Delivered weight	Year of supply
1					
2					
3					

The above data is required to ascertain the steel melting and forging capability of the vendor.

Note: Evidence of the dispatched rotors of above forgings (preferably Material Test Certificate copies) shall be submitted.

B.2 Experience for supply of minimum 3 Rotor forgings for same or higher weights of **high temperature applications of Creep resistant material grades** and are suitable for Steam Turbine applications shall be furnished in the format given below:

SI.NO	Purchase order number /customer details	Material grade	Dimension: diameter (max) & length	Delivered weight	Year of supply
1					
2					
3					

The above data is required to ascertain the Heat treatment (Vertical) capability of the vendor.

Note: Evidence of the dispatched rotors of above forgings (preferably Material Test Certificates copies) shall be submitted.

C. Vendor to confirm supply shall be as per BHEL enquiry drawing and specification and all cross-referred documents referred there in. Pointwise confirmation to BHEL specification shall be provided.

Annexure 1

Vendor to submit details of manufacturing and testing facilities as per format below:

STEEL MELTING FACILITIES:

Melting furnaces details (type, capacity etc.)	
Refining facility details (vacuum degassing, ESR, etc)	
Maximum ingot size • Diameter [mm] • Length [mm] • Weight [mm]	

FORGING FACILITY:

Press capacity in KN	
Max. forging weight in MT	
Manipulator Capacity	
Remarks:	

Heat treatment facilities

1. Availability of vertical heat treatment facility for heat treatment of rotor	
2. Maximum diameter, length and weight of shaft which can be vertically heat treated	
3. Quenching type & medium	

Testing facilities:

1. Chemical analysis , tensile testing, impact, micro-examination etc.	
2. NDT facilities- UT,MPI, boroscopic, residual stress measurement etc	

Machining facilities:

Facility for axial core trepanning 1. minimum & maximum diameter of the core which can be trepanned 2. maximum length of axial core that can be trepanned	
Surface finish of axial bore (Specify achievable value)	
Concentricity, cylindricity and parallelity to achieve drawing requirements.	

Heat stability testing facilities

Max. diameter of forging Max. length of forging Max. weight of forging Max. testing temperature	

Note: The manufacturer shall submit the above information in English with relevant evidences, duly signed and company stamped.

This document shall be provided by the manufacturer only. Documents with the sign and stamp of marketing agent's/representatives companies is not acceptable.

(Sign and seal of Manufacturer)