

Pre-Qualification Requirements for Valve cone, Valve spindle & Valve cone with spindle

Clause 1-4 are mandatory requirements. Offer of vendors not meeting these requirements will not be considered.

1. **Experience Requirement:** The Vendor must have following experience of thermal spray coating and hard facing.

1.1. **Coating experience:** Thermal spray coating by high velocity oxyfuel process (HVOF) or Detonation gun process

1.1.1. **Coating materials:**

1.1.1.1. Cr₃C₂+NiCr (HS 75-25)

1.1.1.2. Ni-Cr-(Co, Fe, Mo)

1.1.2. **Base materials:** 21CrMoV5-7, 21CrMoNiV4-7, X22CrMoV12-1, X10CrMoVNb9-1, X12CrMoWVNbN10-1-1, X19CrMoVNbN11-1

Coating experience with coating materials mentioned at point 1.1.1 on any one of base materials mentioned at point 1.1.2 is required.

1.2. **Hard Facing experience:**

1.2.1. Process of hard facing: Arc welding (SMAW/GMAW/SAW/GTAW/PTAW)

1.2.2. Filler material: Stellite 21/Stellite 6

1.2.3. Base materials: X22CrMoV12-1, X10CrMoVNb9-1, X12CrMoWVNbN10-1-1, X19CrMoVNbN11-1, X13CrMoCoVNbN9-2-1, GX10CrMoVNb9-1, GX12CrMoWVNbN10-1-1

Hard facing experience with filler materials mentioned at point 1.2.2 on any one of base materials mentioned at point 1.2.3 is required.

- 1.3. In support of this, vendor to furnish following experience details. The vendor to submit at least 3 purchase order executed in the last 7 years as on enquiry issue date. Vendor to submit experience details preferably in format given below:

Sl. No.	Material Grade	Qty.	PO No.	Name & Address of customer	Date of supply	Customer Phone No & Email

Vendor to furnish following documents from any one or more from above experience list:

1.3.1. Unpriced PO, Test certificates, dispatch note/ Invoice etc.

1.3.2. The test certificates (TC's) shall be certified by customer / third party Inspection Agency and must contain following details:

- Base material.
- Coating material and coating process
- Filler material and hardfacing process
- Hardness of Thermal Spray Coating and hardfacing.
- Coating and hardfacing DP test result.
- Dimensional Report.
- Thickness of Coating and hardfacing.
- Bond strength of the Coating (Coating process qualification)
- Copy of WPS/PQR/WPQ for above experience

The above information may be provided in one or more PO's / Test certificates.

2. Technical Requirements:

- I. Vendor to submit all the relevant WPS, PQR & WPQ as per enquiry drawings, duly approved by third party for our review in case of PO placement before start of work. Vendor to confirm.
- II. Vendor must confirm to supply enquiry items as per enquiry specification and drawing without any deviation.

3. Manufacturing Facilities:


- I. Vendor must have following in house facility of coating and hard facing:
 - Thermal spray coating by high velocity oxyfuel process (HVOF) or Detonation gun process
 - Hard facing facility (Arc welding: SMAW/GMAW/SAW/GTAW/PTAW)
 - Heat treatment facility covering furnace size, maximum operating temperature, furnace calibration certificate (for Post weld heat treatment and stress relieving)Details of above in-house facility to be submitted.

- II. Vendor to provide list of in house machines (with brief specification, achievable accuracies and surface finish) that will be used for machining the component. In case, vendor offloading any machining operation then vendor to provide machining operation details and required machining facility details in the sub vendor works.

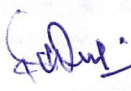
4. Testing Facilities:


Vendor to submit details of in house available testing facility as per the requirement of enquiry drawing and specification. **In case of outsourcing of any test**, vendor to agree to carry out testing at NABL / Government accredited labs only.

Note: Against vendor's replies, BHEL reserves the right to ask for more information/documents/clarifications. Vendor's offer shall not be considered if vendor fails to furnish the document/information/clarifications as mentioned above or vendor doesn't meet the above acceptance criteria.


PDC-T
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(For point 3II)


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(For point 1.2, 1.3.2, 3 & 4)