

GUIDELINES TO VENDORS FOR PREPARATION OF QUALITY ASSURANCE PLAN

1. QAP shall be made in landscape mode on A4 size paper as per the format enclosed.
Font size shall be minimum 10.
2. Each page of QAP shall contain the following information.
 - a) Vendor's name & address.
 - b) Customer: BHEL, Hyderabad.
 - c) Project.
 - d) BHEL Product Standard Number/revision number as referred in P.O.
 - e) BHEL Purchase Order Number & Date.
 - f) Product as per P.O. description.
 - g) QAP Number (unique and shall not repeat)/revision number/date.
 - h) Page number and number of pages
 - i) Vendor signature & stamp
3. QAP shall contain four parts / stages as follows.
 - a) Raw materials and bought out items.
 - b) Inprocess Control / Inspection.
 - c) Final assembly, Inspection & Testing.
 - d) Painting, preservation & packing.
4. Under '**Component**', indicate name of the component (say casing, rotor, pressure gauge, etc).
5. Under '**Characteristics**', indicate appropriately (say chemical analysis, mechanical properties, NDT (UT,DP etc), Hydrostatic test, calibration check etc.)
6. Under '**Class**', indicate minor, major or critical depending on the importance of characteristic.
7. Under '**Type of check**', indicate appropriately (say chemical, mechanical, UT, DP etc.)
8. Under '**Quantum of check**', indicate appropriately (say 100%, 10%, sample, per melt, per heat, all pieces etc.)
9. Under '**Reference document**' and '**Acceptance norms**', appropriate National & International standards, BHEL standards, approved drg references etc should be indicated. It is not correct to mention as "Vendor's internal standards or Vendor's standard practise etc". If vendors' internal standards are referred, same shall be in line with BHEL Spec. indicated in the P.O. These may require review & approval by our Engineering dept.
10. Under 'Format of record', indicate appropriately supplier's Test certificate, calibration certificate, lab report, inspection report etc.
11. Please refer 'Agency' in QAP format.
Under columns
 P: Perform,
 W: Witness,
 V: Verify
Indicate against each characteristic
 1: BHEL CQS/Nominated inspection agency, OR
 2: Vendor / Sub vendor
Note:
 - Performing agency is normally vendor or his sub vendor (Legend 2).
 - Where witness points are indicated in specification, P.O., Drawing etc., for such operations, under Witness (W) column use 1.

- And for review of test certificates Under 'Verify' column, use code 1
12. Under 'D' please put √ (Tick) against each characteristic where vendor proposes to submit test certificate/report etc OR as required as per BHEL Spec.
 13. Vendor's signature & stamp should be available on each page of QAP.
 14. Vendor should read the BHEL Product Standard thoroughly and QAP should be made only inline and relevant to the Specification & Approved Drgs.
 15. The following operations/characteristics/check points may be included (**as appropriate**)
 - a) Visual check
 - b) Dimensional check
 - c) Mechanical and Chemical properties.
 - d) Surface preparation before painting (by chemical cleaning, sand blasting, shot blasting etc as the case may be.)
 - e) Painting check for shade, Dry Film Thickness (DFT), Adhesion/ peel off test etc.
 - f) Check for correctness for all components mounted as per General arrangement Drg, Bill Of Materials (BOM), etc for range, rating, make, color, size, location as per GA, quantity, label description including tag nos., annunciator facia, loose components, accessories, spares etc.
 - g) Verification of test certificate for protection class for the enclosures.
 - h) Mechanical functioning of switches.
 - i) Continuity of earthing and provision of earth points.
 - j) Colour coding of wiring, size, tightness & dressing of wiring.
 - k) Review of test certificates of assembled items, raw materials, internal test reports etc.
 - l) Witness of functional checks, which may include mechanical run & electrical run, H.V.test, IR measurement, Electrical and Mechanical tests etc.
 - m) PQR, WPS, Welder Qualification Record, welding records (fitup, DP) etc.
 - n) Material identification (for punch marks of serial numbers, Heat No, Melt No, Inspector's stamp etc)
 - o) Hydraulic Pressure Test, Pneumatic Pressure Test, Liquid Penetration Examination and other Non Destructive Tests.
 - p) Tests on Galvanised items (Visual, Hammer Test, Knife Test, Thickness, Preece Test (Copper sulphate test), Hydrogen evaluation test, Stripping test (for Mass of Zinc coating)
 - q) All tests as per BHEL Product Standard & approved drawings including Type tests and Routine tests on individual items and on System as a whole.
 - r) Marking, Packing and Preservation.

Vendor's Name & Address:		VENDOR MANUFACTURING QUALITY PLAN							QP. No.:				
		Customer : BHEL, HYDERABAD -32				BHEL P. O .No.:			Rev.:		Date :		
		Project :				P.O.Date :			Page 2 of 2				
Product :				BHEL Spec :			Rev :						
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P W V			REMARKS

Annexure – I

Sampling Plan for Inspection

SI NO.	Lot Size (Numbers)	Sample Size	Acceptance Number (Maximum number of permissible defectives)
1.	2 - 8	Sample size = Lot Size	0
2.	9 - 15	Sample size = Lot Size	0
3.	16 - 25	8	0
4.	26 - 50	13	0
5.	51 - 90	20	0
6.	91 - 150	32	0
7.	151 - 280	50	0
8.	281 - 500	80	0
9.	501 - 1200	125	0
10.	1201 - 3200	200	0

Visual Inspection:

Vendor: 100%

BHEL / BHEL TPIA:

A) 1 – 200 numbers lot size, 100% to be visually inspected.

B) > 200 numbers lot size, 200 numbers to be visually inspected.

LEGEND: P : PERFORM, W : WITNESS, V : VERIFICATION. INDICATE 1 : BHEL / BHEL NOMINATED INSPECTION AGENCY , 2 : VENDOR , 3 : SUB-VENDOR , 4 : BHEL'S CUSTOMER / CONSULTANT AS APPROPRIATE AGAINST EACH COMPONENT / CHARACTERISTICS UNDER THE COLUMNS P W & V. * FOR ITEMS MARKED ✓ (TICK) UNDER COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.	PREPARED BY	REVIEWED BY	APPROVED BY	APPROVED BY
	VENDOR'S SIGNATURE & STAMP	BHEL QA SIGNATURE & STAMP		CUSTOMER'S SIGNATURE & STAMP

Format no. : HYQA/QP/VMQP Rev.03