

TD-201 Rev No. 00 Form No.	 HYDERABAD	PRODUCT STANDARD PROJECT ENGINEERING & SYSTEMS DIVISION HYDERABAD	ANNEXURE-3
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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED, It must not be used directly or indirectly in any way detrimental to the interest of the company.	QAP GUIDELINES & FORMAT (ANNEXURE -3) The QAP format and guidelines for filling up the format shall be used by vendor for preparation and submission of QAP after order placement. Note : 1. Typical /Indicative /Standard QAP(s) for equipment /package attached is reference document and to use by successful bidder in future for preparation and submission of QAP for BHEL /CUSTOMER approval. 2. No deviation to reference document is acceptable.		

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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED . It must not be used directly or indirectly in any way detrimental to the interest of the company.	<u>GUIDELINES TO VENDORS FOR PREPARATION OF QUALITY ASSURANCE PLAN</u> - QAP shall be made in landscape mode on A4 size paper as per the format enclosed. Font size shall be minimum 10. - Each page of QAP shall contain the following information. - Vendor's name & address. - Customer: BHEL, Hyderabad. - Project. - BHEL Product Standard Number/revision number as referred in P.O. - BHEL Purchase Order Number & Date. - Product as per P.O. description. - QAP Number (unique and shall not repeat)/revision number/date. - Page number and number of pages - QAP shall contain four parts / stages as follows. - Raw materials and bought out items. - In process Control / Inspection. - Final assembly, Inspection & Testing. - Painting, preservation & packing. - Under 'Component', indicate name of the component (say casing, rotor, pressure gauge, etc). - Under 'Characteristics', indicate appropriately (say chemical analysis, mechanical properties, NDT (UT,DP etc.), hydrostatic test, calibration check etc.) - Under 'Class', indicate minor, major or critical depending on the importance of characteristic. - Under 'Type of check', indicate appropriately (say chemical, mechanical, UT, DP etc.) - Under 'Quantum of check', indicate appropriately (say 100%, 10%, sample, per melt, per heat, all pieces etc.) - Under 'Reference document' and 'Acceptance norms', appropriate National & International standards, BHEL standards, approved drawing references etc. should be indicated. It is not correct to mention as "Vendor's internal standards or Vendor's standard practice 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. - Under 'Format of record', indicate appropriately supplier's test certificate, calibration certificate, lab report, inspection report etc.		
Ref. Doc	Please refer 'Agency' in QAP format. Under P: Perform, W: Witness, V: Verify Indicate against each characteristic 1: (BHEL CQS/Nominated inspection agency), OR 2: (Vendor / Sub vendor)		

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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED . It must not be used directly or indirectly in any way detrimental to the interest of the company.	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. 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 Specification. 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 Drawings. 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 Drawing, 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 (fit up, 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, Pierce 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) For loose items test certificate or COC is required. s) Packing and Preservation. 16. QAP Format enclosed. 17. Typical Manufacturing QAP is attached.		
Ref. Doc			

TYPICAL MANUFACTURING QUALITY PLAN										MQP.NO.:			
PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032					PRODUCT: TURBINE FLOW METER Project: GAIL GANDHAR BHEL Spec: PY 56489 R00					Date:			
										PAGE 1 OF 3			
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
1.0 RAW MATERIALS & BOUGHT OUT ITEMS													
1.1	BODY MATERIAL	PHYSICAL & CHEMICAL ANALYSIS	MAJOR	PHYSICAL & CHEMICAL	100%	BHEL SPEC./ APPD. DRAWING	BHEL SPEC./ APPD. DRAWING	MTC	✓	2		1	
2.0 INPROCESS INSPECTION													
2.1	BODY PAINTING	COATING THICKNESS	MAJOR	INSPECTION	100%	BHEL SPEC./ APPD. DRAWING	BHEL SPEC./ APPD. DRAWING	TC	✓	2		1	
2.2	TRANSDUCERS	AUDIBLE MEASUREMENT AND MATCHING OF TRANSDUCERS	MINOR	VERIFICATION	100%	BHEL SPEC./ APPD. DRAWING	BHEL SPEC./ APPD. DRAWING	TC	✓	2		1	
2.3		GEOMETRIC MEASUREMENT	MINOR	VERIFICATION	100%	BHEL SPEC./ APPD. DRAWING	BHEL SPEC./ APPD. DRAWING	TC	✓	2		1	
3.0 FINAL INSPECTION & TESTING													
3.1	FLOW METER	LEAKAGE TEST OF ASSEMBLED MEASURING DEVICE	CRITICAL	VERIFICATION	100%	BHEL SPEC./ APPD. DRAWING	BHEL SPEC./ APPD. DRAWING	TC	✓	2	1		
3.2		FUNCTIONAL TEST AND OPERATIONAL	CRITICAL	FUNCTIONAL	100%	BHEL SPEC./ APPD. DRAWING	BHEL SPEC./ APPD. DRAWING	TC	✓	2	1		
3.3		DIMENSION & PHYSICAL VERIFICATION	MINOR	VERIFICATION	100%	BHEL SPEC./ APPD. DRAWING	BHEL SPEC./ APPD. DRAWING	TC	✓	2	1		
3.4		BOM VERIFICATION & VISUAL CHECK	CRITICAL	VERIFICATION	100%	BHEL SPEC./ APPD. DRAWING	BHEL SPEC./ APPD. DRAWING	TC	✓	2	1		
3.5		DRY CALIBRATION(ZERO FLOW TEST)	CRITICAL	CALIBRATION ON CHECK	100%	BHEL SPEC./ APPD. DRAWING	BHEL SPEC./ APPD. DRAWING	TC	✓	2	1		
3.6		WET CALIBRATION	CRITICAL	CALIBRATION ON CHECK	100%	BHEL SPEC./ APPD. DRAWING	BHEL SPEC./ APPD. DRAWING	TC	✓	2		1	

TYPICAL MANUFACTURING QUALITY PLAN													MQP. NO.:		
PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032					PRODUCT: TURBINE FLOW METER Project: GAIL GANDHAR BHEL Spec: PY 56489 R00					Date:			PAGE 2 OF 3		
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	*	AGENCY			REMARKS		
									D	P	W	V			
3.7		RADIOGRAPHY TEST FOR JOINTS & WELDS	CRITICAL	VERIFICATION	100%	BHEL SPEC/ APPD. DRAWING	BHEL SPEC/ APPD. DRAWING	TC	✓	2		1			
3.8		EXPLOSION PROOF & INTRINSIC SAFE	MAJOR	VERIFICATION	---	BHEL SPEC/ APPD. DRAWING	BHEL SPEC/ APPD. DRAWING	TC	✓	2		1			
3.9		CERTIFICATE OF INGRESS PROTECTION	MAJOR	VERIFICATION	100%	BHEL SPEC/ APPD. DRAWING	BHEL SPEC/ APPD. DRAWING	TC	✓	2		1			
3.10		PESO CERTIFICATE	MAJOR	VERIFICATION	---	BHEL SPEC/ APPD. DRAWING	BHEL SPEC/ APPD. DRAWING	TC	✓	2		1			
3.11		SPARES	MAJOR	VERIFICATION	100%	BHEL SPEC/ APPD. DRAWING	BHEL SPEC/ APPD. DRAWING	TC	✓	2	1				
4.0	PRESERVATION & PACKING														
		PACKING (Soundness), Despatch identification marking	MAJOR	VISUAL, Photograph	100%	BHEL SPEC	BHEL SPEC	REPORT/ PACKING LIST, Photograph	✓	2		1			

Notes:-

1. This typical MQP should be read along with specification (latest revision as per PO), approved drawings & approved datasheet.
2. Drawing/datasheet shall prevail over quality plan for contradiction if any.
3. Any project/customer specific requirements which shall be notified have to be fulfilled by the vendor at the time of execution of order.
4. All type test reports submitted shall not be older than 5 yrs from the date of purchase order.

**PROJECT ENGINEERING & SYSTEMS DIVISION****RC PURAM, HYDERABAD.****QUALITY & BUSINESS EXCELLENCE****INSPECTION / TC REVIEW FORMAT**

1	Vendor's Name:		5	Applicable BHEL Spec No:	
2	Project:		6	Approved Drawing No:	
3	PO No:		7	Approved Data Sheet No:	
4	Item Description:		8	Approved QAP No:	

OFFER LIST

S.No	BBU/ PO Sr. No.	Item Description	Total Qty as per PO/BBU	Qty. already accepted	Qty offered for TC review	Cumulative Qty	Balance Qty
A							
B							
C							
D							

TC REVIEW REQUISITION

BBU / PO Sr. No.	QAP Clause No.	Format of Record	Certificate No. & Date	Page No.	REMARKS
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A. Item Description:

B. Item Description:

C. Item Description:

D. Item Description:

E. Item Description:

SUPPLIER / VENDOR SIGNATURE WITH SEAL**BHEL/ BHEL's TPIA SIGNATURE WITH SEAL****Dt:****Dt:**