

**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:**

TD-201 Rev No. 00	Form No.		PRODUCT STANDARD PROJECT ENGINEERING & SYSTEMS DIVISION HYDERABAD	ANNEXURE
				Rev No. 00
				Page 1 of 3
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 -) 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.				

Form No.	 HYDERABAD	PRODUCT STANDARD PROJECT ENGINEERING & SYSTEMS DIVISION HYDERABAD	ANNEXURE
			Rev No. 00
			Page 2 of 3
<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. - 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)			
Ref. Doc			

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		Rev No. 00		
		Page 3 of 3		
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 code1. 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

VENDOR'S NAME & ADDRESS:			MANUFACTURING QUALITY PLAN						QP. NO.:				
									REV NO:		DATE:		
			CUSTOMER: BHEL, HYDERABAD – 32. PROJECT: PRODUCT:			BHEL P.O.NO.: P.O.DATE: BHEL SPEC:			REV:			PAGE 1 OF 1	
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P W V			REMARKS
1.0	RAW MATERIALS & BOUGHT OUT ITEMS												
2.0	INPROCESS INSPECTION												
3.0	FINAL INSPECTION & TESTING												
4.0	PRESERVATION & PACKING												

VENDOR TO NOTE: THIS FORMAT IS IN MICROSOFT WORD. HEADER & FOOTER SHALL BE AVAILABLE IN EACH PAGE OF QP. QP SHALL BE IN LANDSCAPE & A4 SIZE ONLY. FONT SIZE SHALL BE MIN 10. VENDOR SHALL SIGN & STAMP IN EACH PAGE OF QP. LOI REF. & DATE ARE NOT ACCEPTABLE. P.O.NO. & DATE SHALL BE INDICATED. QP NO. SHOULD BE UNIQUE AND SHALL NOT REPEAT. ALL THE TESTS / CHECKS INDICATED IN THE BHEL SPEC. SHALL BE INDICATED IN THE QP.

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

		TYPICAL MANUFACTURING QUALITY PLAN						MQP. NO.:					
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032			PROJECT: IISCO Burnpur PO: PACKAGE: FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279			REV NO:		DATE:			
								PAGE 1 OF 33					
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P W V			REMARKS
Item : THERMOWELL													

1.0 RAW MATERIALS & BOUGHT OUT ITEMS													
1.1	BAR, etc.	CHEMICAL COMPOSITION	MAJOR	MATERIAL TEST	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	MATERIAL TEST CERTIFICATE	√	2	--	1	
2.0 FINAL INSPECTION & TESTING													
2.1	THERMOWELL	PHYSICAL VERIFICATION & MARKING CHECK, BOM (Model no, dimension, Tag nos.)	MAJOR	VISUAL	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	
2.2		SPARES (BOM, PART NOS.)*	MAJOR	VISUAL	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	*If ordered.
2.3		DIMENSIONAL VERIFICATION	MAJOR	MEASUREMENT	10% or min. 2 nos. randomly	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	DIMENSION REPORT	√	2	1	--	

LEGEND: P: PERFORM, W: WITNESS, V: TEST CERTIFICATE REVIEW. INDICATE 1 FOR BHEL / BHEL NOMINATED INSPECTION AGENCY & 2 FOR VENDOR/SUB VENDOR AS APPROPRIATE AGAINST EACH COMPONENT / CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.	PREPARED BY	APPROVED BY
	BHEL QA SIGNATURE	
		BHEL QA SIGNATURE

		TYPICAL MANUFACTURING QUALITY PLAN						MQP. NO.:					
								REV NO:		DATE:			
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032			PROJECT: IISCO Burnpur PO: PACKAGE: FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279			PAGE 2 OF 33					
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
										P	W	V	
2.4		HYDRO TEST & INTERNAL TEST REPORTS	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	-	1	
2.5		IBR IN FORM -IIIC	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	-	1	
2.6		LIQUID PENETRATION TEST FOR WELD JOINTS*	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	-	1	*If applicable
2.7		PMI TEST (FOR SS & AS MATERIALS)	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	-	1	
2.8		INGRESS PROTECTION & WAKE FREQUENCY CALCULATION	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	
3.0 PRESERVATION & PACKING													

LEGEND: P: PERFORM, W: WITNESS, V: TEST CERTIFICATE REVIEW. INDICATE 1 FOR BHEL / BHEL NOMINATED INSPECTION AGENCY & 2 FOR VENDOR/SUB VENDOR AS APPROPRIATE AGAINST EACH COMPONENT /CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.	PREPARED BY	APPROVED BY
	BHEL QA SIGNATURE	BHEL QA SIGNATURE

		TYPICAL MANUFACTURING QUALITY PLAN						MQP. NO.:					
								REV NO:		DATE:			
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032				PROJECT: IISCO Burnpur PO: PACKAGE: FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279				PAGE 3 OF 33			
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
										P	W	V	
3.1	COMPLETE ASSEMBLY	PACKING & PRESERVATION	MAJOR	PACKING	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	PACKING LIST	√	2	--	1	

NOTE:-

1. This standard MQP should be read along with specification (latest revision), approved drawings & approved data sheet.
2. Drawing/data sheet shall prevail over quality plan for contradiction if any between quality plan and drawing/specification.
3. All test certificates/reports reviewed and certified by TPI/BHEL shall be submitted to BHEL as documentation package.
4. All type test reports submitted shall not be older than 5 yrs from the date of purchase order.
5. Any project/customer specific requirements which shall be notified have to be fulfilled by the vendor at the time of execution of order.

LEGEND: P: PERFORM, W: WITNESS, V: TEST CERTIFICATE REVIEW. INDICATE 1 FOR BHEL / BHEL NOMINATED INSPECTION AGENCY & 2 FOR VENDOR/SUB VENDOR AS APPROPRIATE AGAINST EACH COMPONENT / CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.	PREPARED BY	APPROVED BY
	BHEL QA SIGNATURE	BHEL QA SIGNATURE

		TYPICAL MANUFACTURING QUALITY PLAN						MQP. NO.:					
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032			PROJECT: IISCO Burnpur PO: PACKAGE: FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279			REV NO:		DATE:			
								PAGE 4 OF 33					
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P W V			REMARKS
Item : PRESSURE TRANSMITTER													

1.0 RAW MATERIALS & BOUGHT OUT ITEMS													
1.1	PRESSURE TRANSMITTER	MATERIAL OF CONSTRUCTION	MAJOR	MATERIAL CONFIRMITY	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	MATERIAL COMPLIANCE CERTIFICATE	√	2	--	1	
2.0 FINAL INSPECTION & TESTING													
2.1	PRESSURE TRANSMITTER	PHYSICAL VERIFICATION & MARKING CHECK, BOM(model, dimension, Tag no's)	MAJOR	VISUAL	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	
2.2		SPARES* (BOM, PART NOS)	MAJOR	VISUAL	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	* if ordered
2.3		FIVE POINT CALIBRATION	MAJOR	REVIEW	10% or min. 2 nos. randomly	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	CALIBRATION TEST CERTIFICATE	√	2	1	1	

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	BHEL QA SIGNATURE	BHEL QA SIGNATURE

		TYPICAL MANUFACTURING QUALITY PLAN							MQP. NO.:				
									REV NO:		DATE:		
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032				PROJECT: IISCO Burnpur PO: PACKAGE: FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279				PAGE 5 OF 33			
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
										P	W	V	
2.4		EXPLOSION PROOF (statutory approvals like CCOE/PESO, BIS, ATEX etc.)	MAJOR	VERIFICATION	FOR ONE SAMPLE OF PARTICULAR DESIGN	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	EXPLOSION PROOF CERTIFICATE	√	2	--	1	
2.5		INTRINSIC SAFE	MAJOR	VERIFICATION	FOR ONE SAMPLE OF PARTICULAR DESIGN	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	CERTIFICATE FOR INTRINSIC SAFE EXECUTION	√	2	--	1	
2.6		FUNCTIONAL TEST(OUTPUT, HART, ACCURACY, DIAGNOSIS, DISPLAY)	MAJOR	REVIEW	10% or min. 2 nos. randomly	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	1	1	
2.7		*HYDRO TEST FOR PRESSURE PART, NACE ,SIL-2	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	• As applicable
2.8		INTERNAL IR TEST FOR ALL CARD & ASSEMBLY	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	

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	BHEL QA SIGNATURE	BHEL QA SIGNATURE

		TYPICAL MANUFACTURING QUALITY PLAN							MQP. NO.:				
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032			PROJECT:IISCO Burnpur PO: PACKAGE:FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279			REV NO:		DATE:			
								PAGE 6 OF 33					
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P W V			REMARKS
2.9		INGRESS PROTECTION TEST	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	IP CERTIFICATE	√	2	--	1	
2.10		GUARANTEE PERFORMANCE	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	GUARANTEE CERTIFICATE	√	2	--	1	
3.0	PRESERVATION & PACKING												
3.1	COMPLETE ASSEMBLY	PACKING & PRESERVATION	MAJOR	PACKING	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	PACKING LIST, photographs	√	2	--	1	

NOTE:-

1. This standard MQP should be read along with specification (latest revision), approved drawings & approved data sheet.
2. Drawing/data sheet shall prevail over quality plan for contradiction if any between quality plan and drawing/specification.
3. All test certificates/reports reviewed and certified by TPI/BHEL shall be submitted to BHEL as documentation package.
4. All type test reports submitted shall not be older than 5 yrs from the date of purchase order.
5. Any project/customer specific requirements which shall be notified have to be fulfilled by the vendor at the time of execution of order.

LEGEND: P: PERFORM, W: WITNESS, V: TEST CERTIFICATE REVIEW. INDICATE 1 FOR BHEL / BHEL NOMINATED INSPECTION AGENCY & 2 FOR VENDOR/SUB VENDOR AS APPROPRIATE AGAINST EACH COMPONENT / CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.	PREPARED BY	APPROVED BY
	BHEL QA SIGNATURE	BHEL QA SIGNATURE

		TYPICAL MANUFACTURING QUALITY PLAN						MQP. NO.:					
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032			PROJECT: IISCO Burnpur PO: PACKAGE: FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279			REV NO:		DATE:			
								PAGE 7 OF 33					
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P W V			REMARKS
Item : DIFFERENTIAL PRESSURE TRANSMITTER													

1.0	RAW MATERIALS & BOUGHT OUT ITEMS												
1.1	DIFFERENTIAL PRESSURE TRANSMITTER	MATERIAL OF CONSTRUCTION	MAJOR	MATERIAL CONFIRMITY	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	MATERIAL COMPLIANCE CERTIFICATE	√	2	--	1	
2.0	FINAL INSPECTION & TESTING												
2.1	DIFFERENTIAL PRESSURE TRANSMITTER	PHYSICAL VERIFICATION & MARKING CHECK	MAJOR	VISUAL	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	
2.2		FIVE POINT CALIBRATION	MAJOR	REVIEW	10% or min. 2 nos. randomly	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	CALIBRATION TEST CERTIFICATE	√	2	1	--	
2.3		EXPLOSION PROOF (statutory approvals like CCOE/PESO, BIS, ATEX etc.)	MAJOR	VERIFICATION	FOR ONE SAMPLE OF APPLICABLE DESIGN	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	EXPLOSION PROOF CERTIFICATE	√	2	--	1	

LEGEND: P: PERFORM, W: WITNESS, V: TEST CERTIFICATE REVIEW. INDICATE 1 FOR BHEL / BHEL NOMINATED INSPECTION AGENCY & 2 FOR VENDOR/SUB VENDOR AS APPROPRIATE AGAINST EACH COMPONENT / CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.	PREPARED BY	APPROVED BY
	BHEL QA SIGNATURE	BHEL QA SIGNATURE

		TYPICAL MANUFACTURING QUALITY PLAN						MQP. NO.:					
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		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032				PROJECT: IISCO Burnpur PO: PACKAGE: FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279				PAGE 8 OF 33			
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P W V			REMARKS
2.4		INTRINSIC SAFE	MAJOR	VERIFICATION	FOR ONE SAMPLE OF APPLICABLE DESIGN	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	CERTIFICATE FOR INTRINSIC SAFE EXECUTION	√	2	--	1	
2.5		BILL OF MATERIAL (MODEL, DIMENSIONS, TAG NO.)	MAJOR	VISUAL	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	
2.6		SPARES* (BOM, PART NOS)	MAJOR	VISUAL	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	* if ordered
2.7		**HYDRO TEST FOR PRESSURE PARTS, NACE, SIL-2	MAJOR	LEAKAGE	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	--	1	** As applicable
2.8		INTERNAL IR TEST FOR ALL CARD & ASSEMBLY	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	

LEGEND: P: PERFORM, W: WITNESS, V: TEST CERTIFICATE REVIEW. INDICATE 1 FOR BHEL / BHEL NOMINATED INSPECTION AGENCY & 2 FOR VENDOR/SUB VENDOR AS APPROPRIATE AGAINST EACH COMPONENT /CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.	PREPARED BY	APPROVED BY
	BHEL QA SIGNATURE	BHEL QA SIGNATURE

		TYPICAL MANUFACTURING QUALITY PLAN						MQP. NO.:					
								REV NO:		DATE:			
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032				PROJECT: IISCO Burnpur PO: PACKAGE: FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279				PAGE 9 OF 33			
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
										P	W	V	
2.9		FUNCTIONAL TEST (OUTPUT, HART, ACCURACY, DIAGNOSIS, DISPLAY)	MAJOR	PERFORMANCE	10% or min. 2 nos. randomly	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	1	--	
2.10		INGRESS PROTECTION TEST	MAJOR	VERIFICATION	FOR ONE SAMPLE OF APPLICABLE DESIGN	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	IP CERTIFICATE	√	2	--	1	
2.11		GUARANTEE PERFORMANCE	MAJOR	VERIFICATION	FOR ONE SAMPLE OF APPLICABLE DESIGN	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	GUARANTEE CERTIFICATE	√	2	--	1	
3.0	PRESERVATION & PACKING												
3.1	COMPLETE ASSEMBLY	PACKING & PRESERVATION	MAJOR	PACKING	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	PACKING LIST, photographs	√	2	--	1	

LEGEND: P: PERFORM, W: WITNESS, V: TEST CERTIFICATE REVIEW. INDICATE 1 FOR BHEL / BHEL NOMINATED INSPECTION AGENCY & 2 FOR VENDOR/SUB VENDOR AS APPROPRIATE AGAINST EACH COMPONENT / CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.	PREPARED BY	APPROVED BY
	BHEL QA SIGNATURE	BHEL QA SIGNATURE

		TYPICAL MANUFACTURING QUALITY PLAN						MQP. NO.:					
								REV NO:		DATE:			
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032			PROJECT: IISCO Burnpur PO: PACKAGE: FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279			PAGE 10 OF 33					
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P W V			REMARKS

NOTE:-

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		TYPICAL MANUFACTURING QUALITY PLAN						MQP. NO.:					
								REV NO:		DATE:			
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032			PROJECT: IISCO Burnpur PO: PACKAGE: FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279			PAGE 11 OF 33					
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P W V			REMARKS

Item : TEMPERATURE TRANSMITTER

1.0 RAW MATERIALS & BOUGHT OUT ITEMS													
1.1	TEMPERATURE TRANSMITTER	MATERIAL OF CONSTRUCTION	MAJOR	MATERIAL CONFIRMITY	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	MATERIAL COMPLIANCE CERTIFICATE	√	2	--	1	
2.0 FINAL INSPECTION & TESTING													
2.1	TEMPERATURE TRANSMITTER	PHYSICAL VERIFICATION & MARKING CHECK, BOM(model, dimension, Tag no's)	MAJOR	VISUAL	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	
2.2		FIVE POINT CALIBRATION	MAJOR	REVIEW	10% or min. 2 nos. randomly	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	CALIBRATION TEST CERTIFICATE	√	2	1	--	
2.3		EXPLOSION PROOF (statutory approvals like CCOE/PESO, BIS, ATEX etc.)*	MAJOR	VERIFICATION	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	EXPLOSION PROOF CERTIFICATE	√	2	--	1	*If applicable.

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	BHEL QA SIGNATURE		
			BHEL QA SIGNATURE

		TYPICAL MANUFACTURING QUALITY PLAN						MQP. NO.:					
								REV NO:		DATE:			
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032			PROJECT: IISCO Burnpur PO: PACKAGE: FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279			PAGE 12 OF 33					
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
										P	W	V	
2.4		INTRINSIC SAFE	MAJOR	VERIFICATION	FOR ONE SAMPLE OF APPLICABLE DESIGN	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	CERTIFICATE FOR INTRINSIC SAFE EXECUTION	√	2	--	1	
2.5		INGRESS PROTECTION TEST	MAJOR	VERIFICATION	FOR ONE SAMPLE OF APPLICABLE DESIGN	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	IP CERTIFICATE	√	2	--	1	
2.6		FUNCTIONAL TEST (OUTPUT, HART, ACCURACY, DIAGNOSIS, DISPLAY)	MAJOR	PERFORMANCE	10% or min. 2 nos. randomly	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	1	--	
2.7		CONFORMITY & UPDATE TIME TEST	MAJOR	VERIFICATION	FOR ONE SAMPLE OF APPLICABLE DESIGN	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	
2.8		SPARES* (BOM, PART NOS)	MAJOR	VISUAL	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	* if ordered

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	BHEL QA SIGNATURE	BHEL QA SIGNATURE

		TYPICAL MANUFACTURING QUALITY PLAN							MQP. NO.:				
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032			PROJECT:IISCO Burnpur PO: PACKAGE:FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279				REV NO:		DATE:		
									PAGE 13 OF 33				
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
										P	W	V	
2.9		**HYDRO TEST FOR PRESSURE PARTS, NACE, SIL-2	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	** as applicable
3.0	PRESERVATION & PACKING												
3.1	COMPLETE ASSEMBLY	PACKING & PRESERVATION	MAJOR	PACKING	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	PACKING LIST, photographs	√	2	--	1	

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		TYPICAL MANUFACTURING QUALITY PLAN						MQP. NO.:					
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032			PROJECT: IISCO Burnpur PO: PACKAGE: FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279			REV NO:		DATE:			
								PAGE 14 OF 33					
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P W V			REMARKS
Item : PRESSURE GAUGE													

1.0 RAW MATERIALS & BOUGHT OUT ITEMS													
1.1	PRESSURE GAUGE	MATERIAL OF CONSTRUCTION	MAJOR	MATERIAL CONFIRMITY	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	MATERIAL COMPLIANCE CERTIFICATE	√	2	--	1	
2.0 FINAL INSPECTION & TESTING													
2.1	PRESSURE GAUGE	PHYSICAL VERIFICATION & MARKING CHECK, BOM(model, dimension, Tag no's)	MAJOR	VISUAL	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	
2.2		SPARES* (BOM, PART NOS)	MAJOR	VISUAL	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	
2.3		CALIBRATION	MAJOR	REVIEW	10% or min. 2 nos. randomly	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	CALIBRATION TEST CERTIFICATE	√	2	1	--	

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	BHEL QA SIGNATURE	
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		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032				PROJECT: IISCO Burnpur PO: PACKAGE: FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279				PAGE 15 OF 33			
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
										P	W	V	
2.4		VIBRATION TEST	MAJOR	VISUAL	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	--	1	
2.5		WEATHER-PROOFNESS	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	IP CERTIFICATE	√	2	--	1	
2.6		ACCURACY TEST	MAJOR	REVIEW	10% or min. 2 nos. randomly	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	1	--	
2.7		OVER PROTECTION TEST FOR 30 MIN.	MAJOR	REVIEW	10% or min. 2 nos. randomly	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	1	--	
2.8		GUARANTEE PERFORMANCE	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	GUARANTEE CERTIFICATE	√	2	--	1	
3.0 PRESERVATION & PACKING													

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		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032				PROJECT: IISCO Burnpur PO: PACKAGE: FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279				PAGE 16 OF 33			
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
										P	W	V	
3.1	COMPLETE ASSEMBLY	PACKING & PRESERVATION	MAJOR	PACKING	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	PACKING LIST	√	2	--	1	

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								PAGE 17 OF 33					
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P W V			REMARKS
Item : TEMPERATURE GAUGE													

1.0	RAW MATERIALS & BOUGHT OUT ITEMS												
1.1	BOURDON, TUBE, MOVEMENT, BULB, STEM & PROCESS CONNECTION GLAND, etc.	MATERIAL OF CONSTRUCTION	MAJOR	MATERIAL CONFIRMITY	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	MATERIAL COMPLIANCE CERTIFICATE	√	2	--	1	
2.0	FINAL INSPECTION & TESTING												
2.1	TEMPERATURE GAUGE	PHYSICAL VERIFICATION & MARKING CHECK, BOM(model, dimension, Tag no's)	MAJOR	VISUAL	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	
2.2		SPARES* (BOM, PART NOS)	MAJOR	VISUAL	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	* If ordered.
2.3		DIMENSION VERIFICATION	MAJOR	MEASUREMENT	10% or min. 2 nos. randomly	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	

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									PAGE 18 OF 33				
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
										P	W	V	
2.4		CALIBRATION	MAJOR	REVIEW	10% or min. 2 nos. randomly	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	CALIBRATION TEST CERTIFICATE	√	2	1	--	
2.5		COMPATIBILITY OF TG AND THERMOWELL	MAJOR	REVIEW	10% or min. 2 nos. randomly	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	1	--	
2.6		OVER TEMPERATURE STABILITY	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	
2.7		FUNCTION TEST	MAJOR	PERFORMANCE	10% or min. 2 nos. randomly	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	1	--	
2.8		HYDRO TEST AND INTERNAL TEST REPORTS	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	

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TYPICAL MANUFACTURING QUALITY PLAN

MQP. NO.:

PROJECT ENGINEERING & SYSTEMS
DIVISION BHEL,
RC PURAM, HYD-502032PROJECT: IISCO Burnpur
PO:
PACKAGE: **FIELD INSTRUMENT PACKAGE**
BHEL TECH SPEC: PY56279

REV NO:

DATE:

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SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
										P	W	V	
2.9		IBR IN FORM-IIIC	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	
2.10		LIQUID PENETRATION TEST FOR WELD JOINTS*	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	*If applicable
2.11		PMI TEST (FOR SS & AS MATERIALS)	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	
2.12		INGRESS PROTECTION AND WAKE FREQUENCY CALCULATION	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	
2.13	TEMPERATURE GAUGE – ROUTINE TEST	ACCURACY TEST	MAJOR	REVIEW	10% or min. 2 nos. randomly	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	

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PREPARED BY

BHEL QA SIGNATURE

APPROVED BY

BHEL QA SIGNATURE

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SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
										P	W	V	
2.14	TEMPERATURE GAUGE – TYPE TESTS	OVER - TEMPERATURE STABILITY TEST	MAJOR	REVIEW	ON ONE SAMPLE OF APPLICABLE DESIGN/ MODEL	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	
2.15		ACCURACY TEST	MAJOR	REVIEW	ON ONE SAMPLE OF APPLICABLE DESIGN/ MODEL	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	
2.16		RESPONSE TIME TEST	MAJOR	REVIEW	ON ONE SAMPLE OF APPLICABLE DESIGN/ MODEL	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	
2.17		DUST & WATER TIGHT TEST	MAJOR	REVIEW	ON ONE SAMPLE OF APPLICABLE DESIGN/ MODEL	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	IP CERTIFICATE	√	2	--	1	

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BHEL QA SIGNATURE

		TYPICAL MANUFACTURING QUALITY PLAN							MQP. NO.:				
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032			PROJECT:IISCO Burnpur PO: PACKAGE:FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279				REV NO:		DATE:		
									PAGE 21 OF 33				
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
										P	W	V	
2.18	TEMPERATURE GAUGE	GUARANTEE PERFORMANCE	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	GUARANTEE CERTIFICATE	√	2	--	1	
3.0	PRESERVATION & PACKING												
3.1	COMPLETE ASSEMBLY	PACKING & PRESERVATION	MAJOR	PACKING	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	PACKING LIST	√	2	--	1	

NOTE:-

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		TYPICAL MANUFACTURING QUALITY PLAN						MQP. NO.:					
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032			PROJECT: IISCO Burnpur PO: PACKAGE: FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279			REV NO:		DATE:			
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SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P W V			REMARKS

Item : RESISTANCE TEMPERATURE DETECTOR (RTD)

1.0 RAW MATERIALS & BOUGHT OUT ITEMS													
1.1	THERMO ELEMENT, etc.	CHEMICAL & PHYSICAL PROPERTIES	MAJOR	COMPOSITION	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	MATERIAL TEST CERTIFICATE	√	2	--	1	
2.0 FINAL INSPECTION & TESTING													
1. 2. 2.1.	RTD	PHYSICAL VERIFICATION & MARKING CHECK	MAJOR	VISUAL	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	
2.2.		DIMENSIONAL VERIFICATION	MAJOR	MEASUREMENT	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	
2.3.		CALIBRATION	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	CALIBRATION CERTIFICATE	√	2	--	1	

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	BHEL QA SIGNATURE	BHEL QA SIGNATURE

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		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032			PROJECT:IISCO Burnpur PO: PACKAGE:FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279				REV NO:		DATE:		
									PAGE 23 OF 33				
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
										P	W	V	
2.4.	RTD – ROUTINE TESTS	INSULATION RESISTANCE TEST	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	
2.5.		RESISTANCE ACCURACY TEST	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	
2.6.		DIMENSIONAL CHECKUP	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	
2.7.	RTD – TYPE TESTS	INSULATION RESISTANCE TEST	MAJOR	REVIEW	ON ONE SAMPLE OF APPLICABLE DESIGN/ MODEL	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	
2.8.		RESISTANCE ACCURACY TEST	MAJOR	REVIEW	ON ONE SAMPLE OF APPLICABLE DESIGN/ MODEL	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	

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								PAGE 24 OF 33					
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
										P	W	V	
2.9.		THERMAL RESPONSE TIME TEST	MAJOR	REVIEW	ON ONE SAMPLE OF APPLICABLE DESIGN/ MODEL	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	
2.10.		SELF HEATING TEST	MAJOR	REVIEW	ON ONE SAMPLE OF APPLICABLE DESIGN/ MODEL	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	
2.11.		IMMERSION ERROR TEST	MAJOR	REVIEW	ON ONE SAMPLE OF APPLICABLE DESIGN/ MODEL	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	
2.12.		THERMO-ELECTRIC EFFECT TEST	MAJOR	REVIEW	ON ONE SAMPLE OF APPLICABLE DESIGN/ MODEL	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	

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								PAGE 25 OF 33					
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
										P	W	V	
2.13.		LIMITING TEMPERATURE TEST	MAJOR	REVIEW	ON ONE SAMPLE OF APPLICABLE DESIGN/ MODEL	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	
2.14.		STABILITY TEST	MAJOR	REVIEW	ON ONE SAMPLE OF APPLICABLE DESIGN/ MODEL	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	
2.15.		VIBRATION TEST	MAJOR	REVIEW	ON ONE SAMPLE OF APPLICABLE DESIGN/ MODEL	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	
2.16.		PRESSURE TEST	MAJOR	REVIEW	ON ONE SAMPLE OF APPLICABLE DESIGN/ MODEL	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	

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SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
										P	W	V	
2.17.	RTD	GUARANTEE PERFORMANCE	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	GUARANTEE PERFORMANCE	√	2	--	1	
3.0	PRESERVATION & PACKING												
3.1	COMPLETE ASSEMBLY	PACKING & PRESERVATION	MAJOR	PACKING	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	PACKING LIST	√	2	--	1	

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		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032			PROJECT: IISCO Burnpur PO: PACKAGE: FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279			REV NO:		DATE:			
								PAGE 27 OF 33					
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P W V			REMARKS
Item : JUNCTION BOX (WEATHER PROOF)													

1.0 RAW MATERIALS & BOUGHT OUT ITEMS													
1.1	JUNCTION BOX	MATERIAL OF CONSTRUCTION	MAJOR	MATERIAL TEST	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	MATERIAL TEST CERTIFICATE	√	2	--	1	
2.0 FINAL INSPECTION & TESTING													
2.1	JUNCTION BOX	PHYSICAL VERIFICATION & MARKING CHECK, BOM(model, dimension, Tag no's)	MAJOR	VISUAL	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	
2.2		SPARES* (BOM, PART NOS)	MAJOR	VISUAL	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	* If ordered.
2.3		DIMENSION VERIFICATION, INLET & OUTLET ENTRIES	MAJOR	MEASUREMENT	10% or min. 2 nos. randomly	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	

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		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032				PROJECT: IISCO Burnpur PO: PACKAGE: FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279				PAGE 28 OF 33			
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
										P	W	V	
2.4		TAG PLATE MARKING VERIFICATION	MAJOR	VERIFY	10% or min. 2 nos. randomly	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	
2.5		WEATHER PROOFNESS	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	IP CERTIFICATE	√	2	--	1	
2.6		PESO CERTIFICATE	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	TEST CERTIFICATE	√	2	--	1	
3.0	PRESERVATION & PACKING												
3.1	COMPLETE ASSEMBLY	PACKING & PRESERVATION	MAJOR	PACKING	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	PACKING LIST	√	2	--	1	

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		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032			PROJECT: IISCO Burnpur PO: PACKAGE: FIELD INSTRUMENT PACKAGE BHEL TECH SPEC: PY56279			PAGE 29 OF 33					
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P W V			REMARKS

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								PAGE 30 OF 33					
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P W V			REMARKS

Item : UNIVERSAL HAND HELD CONFIGURATOR

1.0 FINAL INSPECTION & TESTING													
1.1	UNIVERSAL HAND HELD CONFIGURATOR	PHYSICAL VERIFICATION & MARKING CHECK, BOM(model, dimension, Tag no's)	MAJOR	VISUAL	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	
		SPARES* (BOM, PART NOS)	MAJOR	VISUAL	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	* If ordered.
1.2		PERFORMANCE	MAJOR	VERIFY	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	CERTIFICATE OF CONFORMANCE	√	2	--	1	
1.3		EXPLOSION PROOF	MAJOR	VERIFICATION	FOR ONE SAMPLE OF APPLICABLE DESIGN	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	EXPLOSION PROOF CERTIFICATE	√	2	--	1	

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SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
										P	W	V	
1.4		INTRINSIC SAFE	MAJOR	VERIFICATION	FOR ONE SAMPLE OF APPLICABLE DESIGN	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	CERTIFICATE FOR INTRINSIC SAFE EXECUTION	√	2	--	1	
1.5		GUARANTEE PERFORMANCE	MAJOR	REVIEW	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	GUARANTEE CERTIFICATE	√	2	--	1	
2.0	PRESERVATION & PACKING												
3.1	COMPLETE ASSEMBLY	PACKING & PRESERVATION	MAJOR	PACKING	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	PACKING LIST, photographs	√	2	--	1	

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SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P W V			REMARKS

Item : FRP CANOPY

1.0	FINAL INSPECTION & TESTING												
1.1	FRP CANOPY	MATERIAL OF CONSTRUCTION (Major Raw Material Glass & Polyester Resins)	MAJOR	MATERIAL TEST	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	MATERIAL TEST CERTIFICATE	√	2	--	1	
1.2		DIMENSION (WXHxD)	MAJOR	PHYSICAL	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	10% witness by BHEL /BHEL TPI
1.3		WORKMANSHIP	MAJOR	VISUAL	Random	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	INSPECTION REPORT	√	2	1	--	10% witness by BHEL /BHEL TPI
2.0	PRESERVATION & PACKING												
2.1	COMPLETE ASSEMBLY	PACKING & PRESERVATION	MAJOR	PACKING	100%	Approved Datasheet/ Approved Drawing/ Tech. spec.	Approved Datasheet/ Approved Drawing/ Tech. spec.	PACKING LIST	√	2	--	1	

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PREPARED BY

BHEL QA SIGNATURE

APPROVED BY

BHEL QA SIGNATURE

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NOTE:-

1. This standard MQP should be read along with specification (latest revision), approved drawings & approved data sheet.
2. Drawing/data sheet shall prevail over quality plan for contradiction if any between quality plan and drawing/specification.
3. All test certificates/reports reviewed and certified by TPI/BHEL shall be submitted to BHEL as documentation package.
4. All type test reports submitted shall not be older than 5 yrs from the date of purchase order.
5. Any project/customer specific requirements which shall be notified have to be fulfilled by the vendor at the time of execution of order.

LEGEND: P: PERFORM, W: WITNESS, V: TEST CERTIFICATE REVIEW. INDICATE 1 FOR BHEL / BHEL NOMINATED INSPECTION AGENCY & 2 FOR VENDOR/SUB VENDOR AS APPROPRIATE AGAINST EACH COMPONENT / CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.	PREPARED BY	APPROVED BY
	BHEL QA SIGNATURE	BHEL QA SIGNATURE