

Quality Requirements

1. Vendor credentials will be submitted to end customer for approval and only approved vendors will be considered further.
2. All the items shall be inspected at Manufacturer works as per Customer approved QP after review by BHEL received from successful bidder. Sample format for quality plan for both Mechanical and Electrical items is enclosed.
3. MQP shall be submitted as per MQP Format (attached along with Technical specification) in line with Typical MQP which is part of Technical specification /Approved datasheet and Technical Specification.
4. Bidders must submit acceptance on enclosed Typical QP and MQP format with vendor sign and seal.
5. Physical Inspection shall be done by BHEL/BHEL AIA at Manufacturer works.
6. Packing of items shall be as per BHEL Engg Approved Packing Drawing/Packing Specifications.
7. BHEL Authorized representatives shall have the right to witness the necessary inspection and testing of goods mentioned in the PO. The supplier shall inform BHEL in advance about the readiness of the goods for inspection and testing. Inspection / Inspection waiver / approval by BHEL does not absolve Supplier's responsibility for conformity of the specification as per the terms of PO. Material Test Certificates shall be submitted to BHEL.
8. Annexure 'Q' shall be filled by Supplier duly signed and sealed.
9. Supplier should be manufacturer not a trader/Agent. *(If the OEM/Principal engaging the services of an agent to participate on their behalf, vendor will be acceptable with respect to Quality requirement provided acceptance on Point No 2, 3, 4 and 7 shall be accepted to supplier)*
- 10. Following Inspection Notes applicable during inspection:**
 - a. Latest version of standards & Specification shall be applied.
 - b. Materials shall be procured in compliance to Functional Technical specification.
 - c. Gauges and measuring instruments with valid calibration only shall be used.
 - d. Inspection / Inspection waiver / approval by BHEL does not absolve Supplier's responsibility for conformity of the specification as per the terms of PO.
 - e. BHEL /BHEL Authorized representatives shall have the right to witness the necessary inspection and testing of goods mentioned in the PO.
 - f. In case of Vendor Drawing & Datasheet, it needs approval by BHEL Engineering.
 - g. This QP shall be read along with relevant PO, BHEL Specification / Approved Drawing/Datasheet.

List of items in this Systems (.....) required OP approval

Sl No.	Item/ Sub system Name	Quantity	Sl No.	Item/ Sub system Name	Quantity
01			08		
02			09		
03			10		
04			11		
05			12		
06			13		
07			14		
<u>List of Minor items in this Systems (.....) required COC of OEM</u>					
01			08		
02			09		
03			10		
04			11		
05			12		
06			13		
07			14		
OEM (ORIGINAL EQUIPMENT MANUFACTURER) SEAL AND SIGN WITH DATE.					

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Manufacturer Logo		MANUFACTURER'S NAME & ADDRESS		MANUFACTURING QUALITY PLAN		PROJECT: MAIN CONTRACTOR: M/s BHEL-RANIPET PO NO:							
				Item/subsystem:	QP NO: Rev: Date: Page:								
SL NO 1	COMPONENT & OPERATION 2	CHARACTERISTICS 3	CLASS 4	TYPE OF CHECK 5	QUANTUM OF CHECK 6		REFERENCE DOCUMENTS 7	ACCEPTANCE NORMS 8	FORMAT OF RECORD 9 D	AGENCY 10			REMARKS 11
					M	B/C				M	B	C	

RAW MATERIAL INSPECTION													
1		CHEMICAL COMPOSITION	MAJOR	CHEMICAL ANALYSIS	1 SAMPLE / HEAT		MTC	√	P	V	V	NO REPAIR WELDING IS PERMITTED ON CI AS CAST / PUNCHED HEAT NO SHALL BE PROVIDED FOR CORRELATION	
		MECHANICAL PROPERTIES	MAJOR	TENSILE TEST	1 SAMPLE / HEAT		MTC	√	P	V	V		
		SURFACE EXAMINATION	MAJOR	VISUAL INSPECTION	100%		IR	√	P	V	V		
2		CHEMICAL COMPOSITION	MAJOR	CHEMICAL ANALYSIS	1 SAMPLE / HEAT		MTC	√	P	V	V		
		MECHANICAL PROPERTIES	MAJOR	TENSILE TEST & HARDNESS	1 SAMPLE / HEAT		MTC	√	P	V	V		
		HEAT TREATMENT (As applicable)	CRITICAL	REVIEW OF TIME- TEMP CHART	100%		HT CAHRT	√	P	V	V		
		SURFACE EXAMINATION	MAJOR	VISUAL INSPECTION	100%		IR		P	V	V		
3		CHEMICAL COMPOSITION	MAJOR	CHEMICAL ANALYSIS	1 SAMPLE / HEAT		MTC	√	P	V	V		
		MECHANICAL PROPERTIES	MAJOR	TENSILE TEST	1 SAMPLE / HEAT		MTC	√	P	V	V		

QP FORMAT

M – Manufacturer / Subcontractor, B - MAIN CONTRACTOR/ BHEL /BHEL Authorized Inspection Agency, C- Customer / Customer Authorized Inspection Agency, P - Perform, V - Verification of reports, W - Witness, TC - Test certificate, DR – Dimensional report. * Record, identified with “tick” (√) under column ‘D’ shall be submitted to customer as a QA documentation package.	Prepared by	Reviewed by	Approved by

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Manufacturer Logo		MANUFACTURER'S NAME & ADDRESS		MANUFACTURING QUALITY PLAN			PROJECT: MAIN CONTRACTOR: M/s BHEL-RANIPET PO NO:						
				Item/subsystem:	QP NO: Rev: Date: Page:								
SL NO 1	COMPONENT & OPERATION 2	CHARACTERISTICS 3	CLASS 4	TYPE OF CHECK 5	QUANTUM OF CHECK 6 M B/C		REFERENCE DOCUMENTS 7	ACCEPTANCE NORMS 8	FORMAT OF RECORD 9 D	AGENCY 10 M B C			REMARKS 11

		SOUNDNESS	CRITICAL	VISUAL INSPECTION	100%		UT Report	√	P	V	V	FOR BAR DIA. ≥ 50 MM ONLY
4							MTC	√	P	V	V	
							MTR	√	P	V	V	

QP FORMAT

IN PROCESS INSPECTION												
5		DIMENSIONAL	MAJOR	MEASURE			IR	√	P	V	V	
		HYDROSTATIC TEST OF CASTING	CRITICAL	PRESSURE TEST	100%		IR	√	P	W	V	SEE NOTE -1
6		DIMENSIONAL	MAJOR	MEASURE			IR	√	P	V	V	
		DYNAMIC BALANCING	CRITICAL	MEASURE	100%		IR	√	P	W	V	SEE NOTE-1
7		SOUNDNESS OF CASTING	MAJOR	NDT-DPT			DPT Report	√	P	V	V	
8		DIMENSIONAL	MAJOR	VISUAL			IR	√	P	V	V	
		SOUNDNESS	CRITICAL	ULTRASONIC TEST			UT Report	√	P	W	V	FOR SHAFT DIA ≥ 50 MM ONLY (EXCEPT THREADED PORTION) SEE NOTE-1
		DP TEST ON MACHINED AREA	MAJOR	DP TEST	100%		DPT Report	√	P	V	V	
FINAL INSPECTION												

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Manufacturer Logo		MANUFACTURER'S NAME & ADDRESS		MANUFACTURING QUALITY PLAN			PROJECT: MAIN CONTRACTOR: M/s BHEL-RANIPET PO NO:						
				Item/subsystem:	QP NO: Rev: Date: Page:								
SL NO 1	COMPONENT & OPERATION 2	CHARACTERISTICS 3	CLASS 4	TYPE OF CHECK 5	QUANTUM OF CHECK 6		REFERENCE DOCUMENTS 7	ACCEPTANCE NORMS 8	FORMAT OF RECORD 9 D	AGENCY 10			REMARKS 11
					M	B/C				M	B	C	

9	PUMP ASSEMBLY								IR	√	P	V	V	
10	PERFORMANCE TEST WITH JOB								IR	√	P	W	W	
									IR		P	W	W	
									IR		P	W	W	
									IR		P	W	W	
11	NPSHR TEST								IR	√	P	W	W	
12	PAINTING PACKING AND PRESERVATIONS								IR	√	P	V	-	

QP FORMAT

INSPECTION NOTES:

a.	Latest version of standards & Specification shall be applied.
b.	Materials shall be procured in compliance to Functional Technical specification.
c.	Gauges and measuring instruments with valid calibration only shall be used.
d.	Inspection/Inspection waiver/approval by BHEL does not absolve Supplier's responsibility for conformity of the specification as per the terms of PO.
e.	BHEL /BHEL Authorized representatives shall have the right to witness the necessary inspection and testing of goods mentioned in the PO.
f.	In case of Vendor Drawing & Datasheet, it needs approval by BHEL Engineering.
g.	This QP shall be read along with relevant PO, BHEL Specification / Approved Drawing/ Datasheet.
h.	This QP is applicable for Mandatory supply also.
i.	All other minor items, which are not cover under this QP, shall be manufactured inspected as per OEM (Original equipment Manufacturer)/BHEL standard practice and relevant standard. Relevant TC/COC will be submitted for the same.

M – Manufacturer / Subcontractor, B - MAIN CONTRACTOR/ BHEL /BHEL Authorized Inspection Agency, C- Customer / Customer Authorized Inspection Agency, P - Perform, V - Verification of reports, W - Witness, TC - Test certificate, DR – Dimensional report. * Record, identified with "tick" (√) under column 'D' shall be submitted to customer as a QA documentation package.	Prepared by	Reviewed by	Approved by

Annexure Q		
	Indent No:	Enquiry no:
Sl.No	BHEL / Customer Requirements	##Specific confirmations by the manufacture(Acceptable/Not acceptable)
1	Quality Plan Requirement: (If SQP is not given & Vendor QP applicable)	
	(i) MQP (Manuafcutering Quality Plan) shall be submitted in attached format for BHEL/Customer review & approval. Our SQP/Typical MQP/ MQP Format is attached for guidance & use.	
	(ii) MQP shall invariably cover w.r.t Inward inspection including on Raw materail Procurement, In process and Final inspection in elaborated way/details.	
	(iii) Bidder shall also to give specific confirmation that on need basis, their competent officials shall visit to BHEL/customer for finalization of Quality plan including test procedure/methodology during preaward / post award approval / detailed engineering in the event of an order.	
	(iv) No deviation on BHEL/Customer approved MQP/ SQP (In case BHEL SQP is provided) is acceptable.	
	(v) Bidder shall agree to submit all cross referred documents other than codes/standrads to BHEL/Customer/Consultant.	
	Important Notes shall be included in MQP : (a) Latest revision of Standard s & Specification shall apply. Only International Standards are applicable. (b) Materials shall be procured in compliance to Functional Technical Specification. (c) Inspection shall be in compliance with Approved Quality Control Procedure for the Product. (d) NDT shall be carried out by Qualified Personnel with compliance to Approved NDT Procedures and Acceptance Norms, as per ASME Section V. (e) Gauges and measuring Instruments, with valid calibration only shall be used. (f) Cleaning and Painting of products shall be carried out as per Approved Painting Schedule. (g) Finished Products shall be packed to comply with Approved Packing Schedule. (h) Welding shall be carried out by Qualified Personnel with compliance to Approved NDT Procedures and Acceptance Norms, as per ASME Section V.	
2	Domestic / Inland Inspection will be carried out by BHEL/BHEL apointed Third Party Inspection Agency (TPIA) / Customer/Customer Apointed Inspection Agency/Consulatnat. This is applicable for all Stage inspection and Final Inspection identified as "W" - Witness or "CHP" - Customer Hold Point as per customer approved Quality Plan/ Technical specification / Approved Drawing/ Approved Data sheet / Scheme / PID / PFD / SLD (Process Instrumentaion Diagram / Process Flow Diagram / Single Line Diagram) etc (As applicable).	
3	Inspection Agency for Foreign Bidders and also for Indian Bidder but importing from Forgn Sources: (1) Any one of the flollowing Third Party Inspection Agency (TPIA) shall be appointed by the bidder and same shall be furnished by the bidder in techno commercial bid itself. (2) The details of TPIA with contact details like Name of the official, Phone no, Email id shall also to be submitted during pre/post award. However cost for such inspection agency shall be borne by the bidder only. Inspection charges for such inspection agency shall be indicated separately so that if BHEL/Customer is undertaking the inspection by on their own , then these charges non claimable by the bidder. List of TPIA 1.M/s Bureau Veritas 2.M/s TUV-Nord 3.M/s TUV-SUD 4.M/s TUV Rheinland 5.M/s Lloyds Register 6.M/s SGS 7.M/s Germanischer Lloyds 8.M/s QUEST 9.M/s Certification Engineers International 10.M/s Intertek 11.M/s IR Class Systems and Solutions 12.M/s DNV 13. M/s Fichtner 14. M/s ABS Inspection Services	

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Sl.No	BHEL / Customer Requirements	##Specific confirmations by the manufacture(Acceptable/Not acceptable)
4	Stage Inspection during manufacturing Process : Stage Inspection during manufacturing shall be carried out as per approved quality plan and all necessary documents shall be provided for review,verification and clearanace for further processing. This inspection call shall be given well in advance (atleast 2 weeks before for Indeginious and 45 days forforeign) to TPI/Bidder's own inspection agency to avoid delay in the manufacturing processes.	
5	Inspection before despatch for domestic supplier : Inspection before despatch at supplier's works shall be carried out by Bidder appointed Inspection agency(As in SI no.3.) Inspection shall be done as per approved Quality plan/ Technical specification/ Approved Drawing/ Approved Data sheet .	
6	Inspection at Forign Source/Supplier: (a) As in sl no: 3. shall be ensured without fail (b) No materail / items shall be despatched without getting the written communication from BHEL / Customer inspection carried out by Bidder apointed Third Party Inspection Agency (As per SI no.3) / Customer/Customer Apointed Inspection Agency/Consulatnat. This is applicable for all Stage inspection and Final Inspection identified as "W" - Witness or "CHP" - Customer Hold Point as per customer approved Quality Plan/ Technical specification / Approved Drawing/ Approved Data sheet / Scheme / PID / PFD / SLD (Process Instrumentaion Diagram / Process Flow Diagram / Single Line Diagram) etc (As applicable). Inspection before despatch for Foreign supplier : Inspection before despatch at supplier's works shall be carried out by bidder appointed inspection agencies having international presence at vendors and or vendor's sub vendor works. Inspection shall be done as per approved Quality plan/ Technical specification/ Approved Drawing/ Approved Data sheet by TPIA mentioned in SI no: 03 at supplier's cost.	
7	Painting shall be done strictly as per BHEL/Customer approved painting schedule / scheme only. Paint Thickness / Paint shade shall be ensured as per BHEL / Customer approved painting schedule / specification / data sheet etc. No deviation is acceptable unless otherwise accepted by BHEL/Customer in writing. Any conflict if any among BHEL / Customer approved painting schedule / Spec / data sheet etc shall be brought to the notice to BHEL well in adavnce before proceding including the BOI being procured for assy / skid like motors etc	
8	Specific conformation for document package in the event of an order (2 Hard copies & soft copy in PDF file) is to be given containing the following with proper linkages (i) Index Sheet (ii) MQP/RQP/Endorsement Sheet (As applicable) (iii) TCs identified by BHEL/ Customer for record for "CHP" / "W" and Verification portion ("V") as given in approved QP. (iv) Final inspection report + TC including Chemical + Mechnaical + HT + NDT etc (v) Third party Inspection report + TC (vi) Customer CHP/ MDCC (vii) Type test / Performance Test reports conducted (viii) Type test / Performance Test approval/ clearance obtained from BHEL/Customer (ix) BOM with As Build Drgs with actual make / rating used with BHEL/customer approved drawings.	
9	Packing / Seaworthy Packing shall be as per BHEL Packing schedule / approved drg / sketch. This shall be ensured to take care tarnsit / handling / transhipment in Road / Sea / Air. Photographs are to be submitted for BHEL review before despatching the material as per contract conditions.	
10	Outsourcing of test facilities: Bidder shall ensure all the testing facilities in house. However If any of the test facilities are not available with successful bidder, then bidder shall ensure the same at NABL accreadted third party lab / Govt / Govt Lab for major testing such as NDT, Electrical & Mechanical testing.	
11	Important Note: No deviation on the above requirement 01 to 10 is acceptable w.r.t Quality Requirement and those offers not meeting these specific customer requirement is liable for rejection and hence the bidder shall submit all the required documentary evidences in the offer itself.	
12	## Necessorily to be filled up by the bidder at the time of offer itself otherwise the offer may not be considered w.r.t Quality Requirement being customer specific requirement.	
13	If the OEM/Principal engaging the services of an agent to participate on their behalf, Then mention OEM /vendor Name & address as well as agent details with their sign and seal.	
VENDOR SIGN AND STAMP:		Vendor Name & Address:



Ref :INSP:CHK:001/ REV 00
DT:10/08/2020

Inspection document Check List

Inspection documents to be submitted after inspection of the items for getting dispatch clearance. Vendor shall provide documents to the BHEL/BHEL TPIA inspector during inspection and TPIA shall sign all the documents.

The document dossier shall contain following.

SL no.	Documents
1	Unpriced PO COPY.
2	Latest approved specification, datasheet, drawing, P&ID, test procedures, approved painting schedule, Packing etc.
3	Approved QAP.
4	CQIR Report (Disposal code should be Accepted all the offered QTY)
5	As per approved QAP all the inspection documents to be submitted. Indexing of the reports as per QAP and each page wise numbered and correlated to QAP. If more than one test in each page, against each test the clause number of QAP to be mentioned. Inspection clause shall be mentioned against each test. 1. Raw Material Test Certificates (NABL approved Lab TC/Manufacturer TC like Mechanical properties, Chemical Properties, UT etc. as per approved QAP.

K. Kovarthan

கி. கோவர்தன்
கி. கோவர்தன் / K. KOVARTHANAN
பரிசுட் இன்ஜினியர் / Sr. Engineer
கualitY கிளம் / Quality Department
BHEL R&D RANIPET-3

	2. In process Inspection Reports like Hydro test, Dimension Report, MPI,UT ,Balancing etc. as per approved QAP. 3. Final Inspection Reports like Shop Assembly with testing reports, Hydro test/Leak / Pressure test reports, Type test Reports, WPS/PQR/WPQ Reports, PT/RT/UT/MT Reports etc. as per approved QAP. 4. Final Inspection like packing and surface preparation & Painting/Metal finishing reports. (Sea worthy packing / Special Packing requirement).
6	Relevant pages of standard shall be attached with report.
7	Calibration reports of the instruments used to be signed by TPI after verification.
8	Above said documents are should be in single .pdf file with not more than 10MB (if more than 10MB can be split into multiple files)
9	Hard copy of the same to be submitted along with material dispatch.

K Kovarthanan

K KOVARTHANAN

கா. கோவர்தனன் / K. KOVARTHANAN
 वरिष्ठ इंजीनियर / Sr. Engineer
 गुणवत्ता विभाग / Quality Department
 बीएचएल राणीपेट, राणीपेट, BHEL BAP, RANIPET-8
DM/QC PROC
BHEL RANIPET