

**FRAMEWORK AGREEMENT FOR FGD FPS PROJECTS
Un-Priced Price Bid Format**

R01-30.10.2020

Item: BRANCH PIPE WITH NOZZLE
PR No: 1900141161

SI No	PR No	Material Code	Material Description	UOM	PR Qty (No.s)	Technical Specification	Price Weightage Factor	Bidder Confirmation (Quoted)
1	1900141161	PY9751409012	TRIPLE PURPOSE NOZZLE (SS304)	EA	166	PY51409	0.20230	
2	1900141161	PY9751409020	TRIPLE PURPOSE NOZZLE (SS316)	EA	437	PY51409	0.61262	
3	1900141161	PY9751409039	FOG TYPE NOZZLE (SS304)	EA	17	PY51409	0.04830	
4	1900141161	PY9751409055	SHORT BRANCH WITH NOZZLE (SS304)	EA	187	PY51409	0.13678	
Total							1.00000	

NOTES:

- 1) Vendor to Quote Lumpsum Price for the Total Package.
- 2) Line Item Rates of the individual items shall be derived by multiplying the "Price Weightage Factor" with the Lumpsum Price quoted.
- 3) Unit Rates of the Individual items thus arrived, shall be binding on the bidder, for the total period of Framework Agreement.
- 4) Observations / Objections, if any, of the Bidder, to the "Price Weightage Factor" shall be brought to the notice of BHEL, during Pre-Bid Stage.
- 5) No Observations / Objections shall be entertained after the Techno-Commercial Bid is opened.
- 6) Bidder to indicate "Quoted" in the column "Bidder's Confirmation" as a confirmation of their bid to the respective item.
- 7) The Bid Evaluation is on Overall L1 Basis. Each and Every item of the Package shall be quoted by the bidder.
- 8) Partial offers will not be considered for evaluation and the same are liable for rejection.
- 9) The details of the Projects for which Framework Agreement is proposed are given elsewhere in the NIT. The distribution of the line items across the projects is attached as **Annexure-A**.
- 10) The permissible ordering limits specified in NIT are strictly applicable on the Total Framework Value. The same are not applicable at the Individual Project level.
- 11) The Total Lump price quoted shall be INCLUSIVE of Freight, Packing & Forwarding and Testing Charges.
- 12) The Total Lump price quoted shall be EXCLUSIVE of GST, Third party inspection (TPI) & Insurance Charges.

DISTRIBUTION OF FRAMEWORK ITEMS ACROSS PROJECTS

Annexure-A to Price Bid Format

ITEM: BRANCH PIPE WITH NOZZLE

PR NO

SL NO	Material No	Material Desc	UOM	PMD No	UWT	KOTHAGUDEM	BHADRADRI	NORTH KARANPURA	BARH-1	BARH-2	MAUDA	BRBCL NABINAGAR	NPCL NABINAGAR	RAMAGUNDAM	KORBA	NSPCL BILLAI	TUTICORIN	UDANGUDI	SAGARDIGHI	ENNORE	BHUSAWAL	YADADRI	PATRATU	PANKI	CONTINGENCY
1.00	PY9751409012	TRIPLE PURPOSE NOZZLE (SS304)	EA	PE.MP.588														0	139			98	0		
2.00	PY9751409020	TRIPLE PURPOSE NOZZLE (SS316)	EA	PE.MP.588		23	35	42	24	24	27	42	42	42	42	27	23	0	0			0	231		
3.00	PY9751409039	FOG TYPE NOZZLE (SS304)	EA	PE.MP.588														0	16			8	0		
4.00	PY9751409055	SHORT BRANCH WITH NOZZLE (SS304)	EA	PE.MP.588														267	0			0	0		

1. The quantities indicated are total quantity with additional 50 % qty variation considered
2. The above list of Quantity , project/customer is tentative only. Final details of quantity, Project/ Customer shall be informed at the time of PO
3. The Project/ Customer are subject to change based on buisness scenario of BHEL.

Bulk Procurement of BRANCH PIPE WITH NOZZLE
Price Variation Formula – Branch pipe with nozzle
PVC-MS- BRANCH PIPE WITH NOZZLE

$$PO = PA \times \left(\left[0.60 \times \frac{MO}{MA} \right] + \left[0.15 \times \frac{FO}{FA} \right] + \left[0.10 \times \frac{LO}{LA} \right] + 0.15 \right)$$

PO	Purchase Order Value, adjusted in accordance with above Price Variation Formula
PA	Purchase Order Value, as per Original Framework Agreement Price

Escalation for Raw Material:

MO	JPC Retail Market Price of “PIG IRON”, as on the date of respective Project PO Placement, <i>calculated as an Average of the Prices for Kolkata, Delhi, Mumbai, Chennai regions.</i>
MA	JPC Retail Market Price for “PIG IRON”, as on the date of Part-1 bid opening of Framework Agreement Tender, <i>calculated as an Average of the Prices for Kolkata, Delhi, Mumbai, Chennai regions.</i>
As published under the Item “ PIG IRON ” by Joint Plant Committee, Ministry of Steel, Govt of India, in their subscription based bimonthly publication “JPC MARKET PRICE RETAIL”.	

Escalation for Fuel & Power:

FO	Wholesale Price Index for “Fuel & Power”, as on the date of respective Project PO Placement
FA	Wholesale Price Index for “Fuel & Power”, as on the date of Part-1 bid opening of Framework Agreement Tender
As published under the Index “ II Fuel & Power ” by Office of the Economic Adviser, Ministry of Commerce and Industry, Govt of India, on their website www.eaindustry.nic.in	

Escalation for Labour:

LO	All-India Average Consumer Price Index Number for Industrial Workers (Base_2016=100), as on date of respective Project PO Placement
LA	All-India Average Consumer Price Index Number for Industrial Workers (Base_2016=100), as on the date of Part-1 bid opening of Framework Agreement Tender
As published by Labour Bureau, Ministry of Labour and Employment, Govt of India, on their website www.labourbureaunew.gov.in	

Overheads and Margin:

0.15	Constant for Overheads and Margin
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NOTE: Latest Index Values, as published by respective agencies, **Available as on the date** of Part-1 bid opening of FA Tender / date of PO, shall be considered, for all the factors.

BULK PROCUREMENT OF GENERIC PIPING ITEMS Pre-Qualification Criteria (Technical)

Package Name : **BRANCH PIPE WITH NOZZLE**
PR No : **1900141161**

Manufacturers of **BRANCH PIPE WITH NOZZLE**, qualified as per the Pre-qualification criteria laid down below, are allowed to bid. Documentary evidence shall be provided by such bidders to establish their claim. **However, offer consideration is subjected to approval from end Customer.**

The bid evaluation shall be on Overall L1 basis. The Bidder shall meet the Pre-Qualification Criteria (listed below.

Non-compliance to any of the criteria listed below will lead to disqualification of bidder for the subject item of the tender.

Qualification Criteria of the Bidder:

- 1.** The bidder should be an established manufacturer of **Branch pipe with nozzle** and should have successfully completed Manufacture, Supply of **Branch pipe with nozzle**.
- 2.** The Bidder should have successfully completed supply of **Branch pipe with nozzle** for similar specification with a total minimum quantity of **565 No.s** through a single Purchase Order or multiple Purchase Orders in the last 5 years ending on original due date of this tender, with at least one order executed after 01.01.2019.
- 3.** Detailed BOQ of the items supplied, satisfying the criteria laid down above, shall be provided in the format enclosed as Annexure-1, with details like Project & Customer, Description & Quantity of Items supplied, PO details etc. as a minimum for assessing pre-qualification. **PO Copies, Inspection Reports and Dispatch documents shall be enclosed for the references provided.**
- 4.** The bidder should not have been under suspension for business or blacklisted by any of the BHEL units.

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TECHNICAL SPECIFICATION
FOR BRANCH PIPE WITH NOZZLE

Revisions :	Prepared by:	Checked by:	Approved By:	Date
	-SD-	-SD-	-SD-	
00	Sumant	Amit/PCS	MNSR	28.07.18

**1. SCOPE/INTENT:**

- 1.1.** This specification covers the technical requirements of constructional features, accessories, inspection, tests, test certificates, documentation, preservation, packing and forwarding of Branch Pipe with Nozzle.
- 1.2.** Scope of supply shall include design, manufacture, inspection, shop testing, shop painting, packing and delivery.
- 1.3.** The supplier shall strictly comply with this standard in all respects. No deviation shall be allowed. However, bidder can raise technical queries on the specification during pre-bid stage and clarifications may be sought from BHEL before the bid submission.

APPLICATION:

These items suitable for fire protection systems (Water based protection system).

2. VARIANT TABLE:

Var. No.	Description	Material Code
01	Triple purpose nozzle (SS304)	PY9751409012
02	Triple purpose nozzle (SS316)	PY9751409020
03	Fog type nozzle (SS304)	PY9751409039
04	Fog type nozzle (SS316)	PY9751409047
05	Short Branch with nozzle (SS304)	PY9751409055
06	Short Branch with nozzle (SS316)	PY9751409063

Note: Bidder to quote as per Material Code as mentioned in the Enquiry

3. TECHNICAL REQUIREMENTS:**3.1. SS 304 Triple Purpose nozzle, Fog Type nozzle and Branch pipe with Solid Jet Nozzle**

Sl. No.	Requirements	Compliance
A	TRIPLE PURPOSE NOZZLE	
3.1	Size	63 mm dia. Male instantaneous inlet
3.2	Outlet	Hollow jet, Spray and Shut Off
3.3	Standard	IS:2871
3.4	VOID	
3.5	Material of Construction	
3.5.1	Body	SS 304 (IS:3444, Gr 1)
3.5.2	Nozzle	SS 304 (IS:3444, Gr 1)



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3.5.3	Diffuser Nut & Valve	SS 304 (IS:3444, Gr 1)
3.5.4	Washer & O Ring	Rubber IS:937
3.6	Finish	Natural finish
3.7	End Connection	Instantaneous type male coupling of size 63 mm
3.8	Working Pressure	5 Kgf/cm ² to 15 Kgf/cm ²
3.9	Hydraulic Test Pressure	21 Kgf/cm ² (For 2.5 Minutes)
B	FOG TYPE NOZZLE	
3.1	Size	63 mm dia. Male instantaneous inlet
3.2	Outlet	Solid jet or dense even fog
3.3	Standard	IS:952
3.4	VOID	
3.5	Material of Construction	
3.5.1	Body	SS 304 (IS:3444, Gr 1)
3.5.2	Bush	SS 304 (IS:3444, Gr 1)
3.5.3	Handle	SS 304 (IS:3444, Gr 1)
3.5.4	Fog Head	SS 304 (IS:3444, Gr 1)
3.5.5	Male Inlet & parts	SS 304 (IS:3444, Gr 1)
3.5.6	Fog applicator	Rubber IS:937
3.5.7	Washer & O ring	Rubber IS:937
3.6	Finish	Natural finish.
3.7	End Connection	Instantaneous type male coupling of size 63 mm
3.8	Working Pressure	5 Kgf/cm ² to 15 Kgf/cm ²
3.9	Hydraulic Test Pressure	21 Kgf/cm ² (For 2.5 Minutes)
C	SHORT BRANCHPIPE WITH NOZZLE	
3.1	Size	63 mm dia. Male instantaneous inlet
3.2	Outlet	Solid jet nozzle
3.3	Standard	IS:903
3.4	Approvals	ISI Marked
3.5	Material of Construction	
3.5.1	Branch pipe	SS 304 (IS:3444, Gr 1)
3.5.2	Nozzle	SS 304 (IS:3444, Gr 1)
3.5.3	Washer	Rubber IS:937
3.6	Finish	Natural finish / Buffed / Polished
3.7	End Connection	Instantaneous type male coupling of size 63 mm
3.8	Working Pressure	5 Kgf/cm ² to 15 Kgf/cm ²
3.9	Hydraulic Test Pressure	21 Kgf/cm ² (For 2.5 Minutes)



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3.2. SS 316 Triple Purpose nozzle, Fog Type nozzle and Branch pipe with Solid Jet Nozzle

Sl. No.	Requirements	Compliance
A	TRIPLE PURPOSE NOZZLE	
3.1	Size	63 mm dia. Male instantaneous inlet
3.2	Outlet	Hollow jet, Spray and Shut Off
3.3	Standard	IS:2871
3.4	VOID	
3.5	Material of Construction	
3.5.1	Body	SS 316 (IS:3444, Gr 4)
3.5.2	Nozzle	SS 316 (IS:3444, Gr 4)
3.5.3	Diffuser Nut & Valve	SS 316 (IS:3444, Gr 4)
3.5.4	Washer & O Ring	Rubber IS:937
3.6	Finish	Natural finish
3.7	End Connection	Instantaneous type male coupling of size 63 mm
3.8	Working Pressure	5 Kgf/cm ² to 15 Kgf/cm ²
3.9	Hydraulic Test Pressure	21 Kgf/cm ² (For 2.5 Minutes)
B	FOG TYPE NOZZLE	
3.1	Size	63 mm dia. Male instantaneous inlet
3.2	Outlet	Solid jet or dense even fog
3.3	Standard	IS:952
3.4	VOID	
3.5	Material of Construction	
3.5.1	Body	SS 316 (IS:3444, Gr 4)
3.5.2	Bush	SS 316 (IS:3444, Gr 4)
3.5.3	Handle	SS 316 (IS:3444, Gr 4)
3.5.4	Fog Head	SS 316 (IS:3444, Gr 4)
3.5.5	Male Inlet & parts	SS 316 (IS:3444, Gr 4)
3.5.6	Fog applicator	Rubber IS:937
3.5.7	Washer & O ring	Rubber IS:937
3.6	Finish	Natural finish.
3.7	End Connection	Instantaneous type male coupling of size 63 mm
3.8	Working Pressure	5 Kgf/cm ² to 15 Kgf/cm ²
3.9	Hydraulic Test Pressure	21 Kgf/cm ² (For 2.5 Minutes)
C	SHORT BRANCHPIPE WITH NOZZLE	
3.1	Size	63 mm dia. Male instantaneous inlet



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3.2	Outlet	Solid jet nozzle
3.3	Standard	IS:903
3.4	Approvals	ISI Marked
3.5	Material of Construction	
3.5.1	Branch pipe	SS 316 (IS:3444, Gr 4)
3.5.2	Nozzle	SS 316 (IS:3444, Gr 4)
3.5.3	Washer	Rubber IS:937
3.6	Finish	Natural finish / Buffed / Polished
3.7	End Connection	Instantaneous type male coupling of size 63 mm
3.8	Working Pressure	5 Kgf/cm ² to 15 Kgf/cm ²
3.9	Hydraulic Test Pressure	21 Kgf/cm ² (For 2.5 Minutes)

4. PAINTING

As per OEM standard.

5. INSPECTION AND TESTING

- 5.1. Bidder shall maintain an effective Quality Assurance System to ensure that all equipment and material supplied meets high Quality standards.
- 5.2. After award of contract, bidder shall submit Quality Plan for BHEL's approval.
- 5.3. Bidder to note that all the cost involved in any of the inspection & testing requirements as per the approved quality plan shall be included in the basic price quoted by the bidder. Bidder shall not be eligible to raise any extra claim on account of any inspection & testing of the complete Branchpipe with nozzle as per the approved quality plan.
- 5.4. The following are the minimum tests to be conducted on the Branchpipe with nozzle :
 - i. Dimension & Visual test
 - ii. Hydro test
 - iii. Painting & Marking
 - iv. Material test certificate review

Any other test as mentioned in approved Quality Assurance Plan shall be complied by the bidder.

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5.5. Inspection

- i. Bidder shall notify in writing to BHEL, at least two weeks (Ten working days) in advance of the date and the place at which the items will be ready for witnessing of inspection / testing. In case any postponement becomes necessary, the CONTRACTOR shall provide written notification at least 3 days prior to the original scheduled date.
- ii. Bidder after satisfying that all inspection requirements as per approved ITP and applicable specifications / documents have been taken care by TPIA, shall submit copy of the Inspection Certificate and all Quality control records to Purchaser in requisite copies along with Statutory Certificates if any, duly endorsed by their Quality Control Manager.
- iii. In case non-conformity is noted, 100% of the lot shall be checked by TPIA and all the non-confirming materials shall be replaced by the bidder.

5.6. Inspection Certificate

- i. Bidder shall submit, copy of each Inspection Certificate (IC) / Inspection Release Note (IRN) issued by TPIA, along with all attachments mentioned therein.

5.7. Inspection agency:

- i. Purchaser / Third Party appointed by purchaser
- ii. The inspection agency shall be indicated in the quality plan and shall be as per the approved quality plan.

6. DOCUMENTATION:**6.1. Along with the offer:**

Signed and stamped copy of this specification as token of acceptance of the specification for execution in the event of Order.

6.2. After PO Placement:

Two copies each of the following documents shall be submitted for approval.

- G.A. Drawings with weights and dimensions
- Technical Data sheets, Catalogue
- Material specification details
- Tests to be conducted



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- O&M manuals
- Storage/Preservation instructions for at least three years.

Final documentation consisting of above documents shall be submitted in requisite sets (to be decided post order) of hard and soft copies.

Schedule for document submissions:

S.no	Description	Schedule
1	Submission of GA drawing & Technical Datasheet by vendor	7 days from the date of P.O.
2	Approval GA drawing & Technical Datasheet by BHEL	14 days from receipt of the document*

* The GA drawing & Technical Datasheet submitted by vendor shall be strictly in compliance to all applicable standards and specification.

7. PRESERVATION, PACKING & MARKING OR PACKING CASE:

- 7.1.** A suitable temporary rust preventive with minimum life of two years shall be applied inside the item/equipment body in order to prevent corrosion.
- 7.2.** All the item / equipment shall be packed suitably in closed wooden cases in order to avoid damage during transit and storage at BHEL. Suitable supports shall be provided inside the cases in order to avoid internal movement. In case of exported consignments, the packing shall be seaworthy (Refer enclosed Annexure for Export Packing guidelines, AA 0490009, Rev-01).

Each item / equipment after end protection should be wrapped in polythene sheet before packing in the cases.

Each packing case must contain two copies of the shipping list giving details of all the contents of the case.

- 7.3.** The following marking shall be done on each packing case minimum on two sides and at the top.
- (a) Complete address of the consignee and destination as per BHEL Purchase Order.
 - (b) BHEL Purchase order Number
 - (c) BHEL item Material Code
 - (d) Number of pieces in each packing case
 - (e) Net Weight
 - (f) Gross Weight
 - (g) Packing case number and total number of packing
 - (h) Arrow indicating top of the packing case.



MANUFACTURING QUALITY PLAN

MQP. NO.: BHEL/BP/2015-16

PROJECT ENGINEERING & SYSTEMS
DIVISION BHEL,
RC PURAM, HYD-502032

PRODUCT: BRANCH PIPE AND NOZZLE


REV NO: 00

DATE: 01-11-2015

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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	
1.0	RAW MATERIALS & BOUGHT OUT ITEMS												
		CHEMICAL AND PHYSICAL	MAJOR	ANALYSIS TEST	ONE/LOT	BHEL SPEC./APPD DRG/APPD. DATA SHEET	BHEL SPEC./APPD DRG/APPD. DATA SHEET	IR	√	2		1	
2.0	INPROCESS INSPECTION												
3.0	FINAL INSPECTION & TESTING												
		VARIFICATION OF MANUFACTURER	MAJOR	VISUAL	100%	BHEL SPEC./APPD DRG/APPD. DATA SHEET	BHEL SPEC./APPD DRG/APPD. DATA SHEET	IR	√	2	1		
		VISUAL INSPECTION	MAJOR	VISUAL	100%	BHEL SPEC./APPD DRG/APPD. DATA SHEET	BHEL SPEC./APPD DRG/APPD. DATA SHEET	IR	√	2	1		
		DIMENSION	MAJOR	VISUAL	100%	BHEL SPEC./APPD DRG/APPD. DATA SHEET	BHEL SPEC./APPD DRG/APPD. DATA SHEET	IR	√	2	1		
		BOM CHECK	MAJOR	VISUAL	100%	BHEL SPEC./APPD DRG/APPD. DATA SHEET	BHEL SPEC./APPD DRG/APPD. DATA SHEET	IR	√	2	1		
		REVIEW OF TEST CERTIFICATE	MAJOR	VISUAL	100%	BHEL SPEC./APPD DRG/APPD. DATA SHEET	BHEL SPEC./APPD DRG/APPD. DATA SHEET	IR	√	2	1		
		HYDRO TEST	MAJOR	REVIEW	SAMPLE	BHEL SPEC./APPD DRG/APPD. DATA SHEET	BHEL SPEC./APPD DRG/APPD. DATA SHEET	IR	√	2	1		
4.0	PRESERVATION & PACKING												

LEGEND: P: PERFORM, W: WITNESS, V: TEST CERTIFICATE REVIEW. INDICATE 1 FOR BHEL / BHEL NOMINATED INSPECTION AGENCY/END USER/END USER'S REPRESENTATIVE & 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.

		MANUFACTURING QUALITY PLAN						MQP. NO.: BHEL/BP/2015-16					
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032			PRODUCT: BRANCH PIPE AND NOZZLE			REV NO: 00		DATE: 01-11-2015			
		PAGE 2 OF 2											
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
	PACKING	SOUNDNESS OF PACKING,LOADING e.t.c.	MAJOR	VARIFICATION	100%	AS PER BHEL SPEC./APPD DRG./APPD DATA SHEET	AS PER BHEL SPEC./APPD DRG./APPD DATA SHEET	IR	√	2	1		

Note: NTPC RQP shall be followed in case of NTPC project along with BHEL tender requirement.

LEGEND: P: PERFORM, W: WITNESS, V: TEST CERTIFICAT REVIEW. INDICATE 1 FOR BHEL / BHEL NOMINATED INSPECTION AGENCY/END USER/END USER'S REPRESENTATIVE & 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.

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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.

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**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
3. QAP shall contain four parts / stages as follows.
 - a) Raw materials and bought out items.
 - b) In process 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 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.
10. Under 'Format of record', indicate appropriately supplier's test certificate, calibration certificate, lab report, inspection report etc.

Ref. Doc

11. 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)
Note: Performing agency is normally vendor or his sub vendor (Legend 2). Where

Form No.



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ANNEXURE

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- 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) Packing and Preservation.
 16. QAP Format enclosed.
 17. Typical Manufacturing QAP is attached.
 - 18. Packing shall be witnessed by BHEL/BHEL's TPIA.**
 - 19. NTPC RQP shall be followed in case of NTPC project along with BHEL tender requirement.**

Ref. Doc

VENDOR'S NAME & ADDRESS:		TYPICAL MANUFACTURING QUALITY PLAN							QP. NO.:				
		CUSTOMER: BHEL, HYDERABAD – 32.				BHEL P.O.NO.:			REV NO:	DATE:			
		PROJECT:				P.O.DATE:			PAGE1 OF2				
PRODUCT:				BHEL SPEC:			REV:						
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
										P	W	V	

NOTES:

1. QAP shall be prepared in line with specification (latest revision as per PO), approved drawings & approved datasheet, approved BOM (as applicable).
2. Approved drawing/datasheet & specification shall prevail over quality plan in case 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. During witness of inspection, the Vendor/Supplier/manufacturers shall furnish valid calibration certificate for measuring and testing instruments, to be used during inspection, with clear identification of instrument number from NABL accredited laboratory.
5. Material Test certificates for physical & chemical properties shall be submitted as per agreed ITP. Test Certificates submitted shall be from approved laboratories accredited by NABL. Materials used for manufacturing shall not be more than five years old.
6. Material test certificate shall include tensile, impact, hardness, bend, IGC, hot tensile, grain size, chemical analysis etc. as required by applicable material code /approved drwg./data sheet.
7. Type test certificate for electrical, electronics and instrumentation items shall be furnished which in general shall not be more than 5 years old from the effective date of contract. In case Type test certificates are not available, Vendor/Supplier shall organize Type test for such items at their cost.
8. If testing from outside laboratory is required, Vendor/ Supplier shall get the samples/equipment tested from NABL accredited laboratory. In case of any dispute about test results and test methods or for other reasons Consultant can opt for getting sample/equipment tested from NABL accredited laboratory. Cost of the such test(s) shall be borne by Vendor/Supplier.
9. WPS/PQR/WPQ to be submitted for review wherever required. All welding shall be done by qualified welders. Duly endorsed documents will be submitted to BHEL/TPIA's review.
10. Hydro test shall be done in un-painted condition as per approved procedure/relevant code.
11. Any other tests/ checks indicated in specification, P.O., or drawing/data sheet & any additional checks envisaged by BHEL/Customer as part of correspondence to ensure workmanship, finish, aesthetics, etc. shall also be conducted and witnessed/verified by BHEL /TPIA /Customer as per project requirement.
12. All documents issued by statutory authorities such as CCOE /IBR, CMRI, ATEX etc., shall be submitted during inspection.
13. Only type test certificate of same design and same Material of Construction of equipment to be submitted, wherever required.
14. All the relevant test reports /certificates shall be submitted during inspection. The reviewed and certified documents by BHEL/TPIA/Customer shall be submitted (QAP cl no wise with page nos) to BHEL as documentation package.
15. All sub-ordered items, bought out items, electrical & instrumentation Items shall be procured from approved / agreed vendor list with BHEL/BHEL's Customer.
16. Packing shall be witnessed by BHEL/BHEL's TPIA.

LEGEND: P: PERFORM, W: WITNESS, V: VERIFICATION. INDICATE 1 FOR BHEL (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



**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
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: