



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

( भारत सरकार का उपक्रम )


**BHARAT HEAVY ELECTRICALS LIMITED**

(A Govt. of India Undertaking)

Bidder shall comply the following points.

1.0	<b>Technical Pre-qualification Criteria</b>
a	The bidder should be an manufacturer & have Designed, Tested & Supplied Level Switch within the period not exceeding Five (7) years reckoned from bid submission date in any one of the captive power plant applications / hydrocarbon industries like Refinery, Petrochemical and gas processing plants under similar process conditions.
b	The bidder should have executed at least one (1) job in last 7 years for establishment of business continuity.

2.0	<b>Following Documents / Information to be submitted in support of Technical Pre-Qualification Criteria above</b>
a	Bidder shall provide the following documents in support of s.no. 1.0 (a) above (1) Purchase Order details (2) End user Approved drawings / documents which indicates Make, model, application, etc (OR) any other document which provides the above details
b	Bidder shall provide the following documents in support of s.no. 1.0 (b) above (1) Purchase Order details (2) LR copies / invoices

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<div style="display: flex; justify-content: space-between;"> <div style="width: 15%; transform: rotate(-90deg); transform-origin: left top; white-space: nowrap;"> <p><b>CONFIDENTIAL / NOT FOR RELEASE</b></p> <p>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.</p> </div> <div style="width: 85%; text-align: center;"> <h3 style="color: blue; text-decoration: underline;">Specification for Hookup Material Package</h3> </div> </div> <div style="margin-top: 10px;"> <p><b>1. SCOPE</b>          This technical specification covers the Design, Engineering, Manufacturing, testing at vendor works, inspection by purchaser, packing and transportation to site of instrument Hookup materials like Seamless pipes/Tubes, Pipe fittings, Tube fittings, Valves, etc.</p> <p><b>2. SCOPE of SUPPLY</b> – As per schemes mentioned in this specification and enquiry.</p> <p><b>3. INSTRUCTIONS TO BIDDERS</b></p> <p>3.1 Bidders <b>are advised to contact BHEL for essential technical queries in writing <u>within one week of issue of Enquiry</u></b>. In the event of any conflict between these specifications, data sheets, related standards, codes etc. the vendor shall refer the matter to the purchaser for clarifications before bid submission <b>and the decision of Purchaser shall be final &amp; binding on Bidder, without any cost &amp; delivery implications. In the event of conflict, most stringent requirements shall be followed in general.</b></p> <p>3.2 Offers with incomplete information will not be considered for evaluation, and are likely to be rejected outright without any further interaction with the Bidder.</p> <p>3.3 Any technical features [over &amp; above BHEL enquiry specification requirements] proposed by Bidder will not be given preference for the purpose of evaluation.</p> <p>3.4 Bidder shall submit the “Duly filled &amp; Signed copy of Check list” compulsorily along with technical offer without which offer is liable for rejection without any further interaction with the Bidder</p> <p><b>4. ORDER EXECUTION PHILOSOPHY</b></p> <p>4.1 BOM listed in this specification along with their technical description, MOC, size, quantity requirements, etc.</p> <p>4.2 Vendor to consider all the material in their scope of supply. No deviation is acceptable.</p> <p>4.3 Vendor shall supply all the material listed in BOM table in LOOSE in fully packed condition (wooden boxes only). Assembling/welding of BOM is not in vendor scope.</p> <p>4.4 However vendor to ensure that end connection &amp; thickness of each item matching to the item connected to it.</p> <p>4.5 Vendor shall follow the latest version of referred standards.</p> <p><b>5. SUB VENDOR LIST</b> – Not applicable</p> </div>					

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**6. CHECK LIST** (To be filled by BIDDER and submitted along with Technical offer is compulsorily)

Vendor shall submit the following documents mandatorily as part of COMPLTE technical offer.

Enquiry No. / Date :

Name of the Bidder :

Project Name :

Item Description :

S. No	Document	Bidder confirmation (Yes/No)	Remarks
1	Technical offer complies with the specifications and its associated annexures, pre-bid clarifications in Toto and there are no technical deviations. Signed and stamped copy of this specification along with annexures enclosed along with technical offer.		
2	In case of deviation, vendor to confirm that these are technically not feasible deviations and same are submitted in <b>BHEL format</b> .  In case technically feasible deviations are proposed by the bidder and subsequently withdrawn, <u>no commercial implications can be claimed by the bidder</u>		
3	All items are manufactured conforming to latest version of material grade standard and manufacturing standard mentioned in this specifications		
4	<b>Bidder to quote as per BHEL price format only. No other format is acceptable.</b> Bidder to attach un-priced price bid format by indicating "QUOTED" against each item and submit with technical offer duly signed & stamped.		
5	For addition/reduction of quantity, unit rate quoted in the present offer shall be considered during ordering and shall be valid up to execution of the contract to the extent of + 10% and -30% of order Value.		
6	Bidder to agree that Bill of materials / list of equipment furnished in the offer is only for information; Vendor shall supply all the material to meet the performance, sizing & technical requirement as per specification & its Annexures, scope matrix etc.		

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(Bidder's Signature and stamp with date)

### DEVIATION FORMAT

Enquiry No.:Item:Name of Bidder:Offer Ref. No.:

Sl. No.	Clause no. & Spec. no.	Description as per Specification	Deviation taken	Nature of Deviation	Remarks

**NOTES:**

1. Technical offer of the bidder will be evaluated only on the basis of Deviation Schedule. Deviation Schedule constitutes this sheet (with these Notes) duly signed and stamped.
2. Deviations, if any, shall be clearly brought out only in this format. Deviations mentioned / taken elsewhere or in any other format will be ignored.
3. Additional sheets in the same format can be attached by the vendor, if necessary.
4. Nature of Deviations shall only be of Design / Manufacturing constraints and non-availability of items / components / makes in market.
5. No price implications shall be entertained for deviations withdrawn during the technical scrutiny. If any deviations are accepted by BHEL during technical scrutiny then also there will be no price implication. Hence, in no case there will be consideration of Price implications.
6. Reasons for the deviations shall be specified in the Remarks column.
7. If there are no deviations from the specifications, bidder still has to submit the signed copy of this format by writing "NO Deviations" on this format.
8. If the "Deviation Schedule" is not submitted along with the offer, the bidder's offer is likely to be rejected without any further interaction with the bidder. Only the accepted deviations in conjunction with the original tender shall constitute the contract document for the award of job to the bidder

SIGNATURE OF THE BIDDER\_\_\_\_\_

NAME\_\_\_\_\_

DESIGNATION\_\_\_\_\_

DATE\_\_\_\_\_

COMPANY SEAL

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**7. TECHNICAL SPECIFICATIONS of HOOKUP Materials****7.1 SEAMLESS PIPEs / PIPE NIPPLEs**

S.No.	Description	:	Requirement
1.	Manufacturing standard	:	ASME B 36.10 - for CS & AS pipes ASME B 36.19 - for SS pipes
2.	Material Grade standard	:	ASTM A 106 – For CS pipes ASTM A 335 – For AS pipes ASTM A 312 – For SS pipes
3.	Shipping length without joints for pipes	:	6 meters
4.	Dimensions	:	As per ENQUIRY & FABRICATION Drawings

**7.2 Concentric SWAGE NIPPLE (Forged)**

S.No.	Description	:	Requirement
1.	Manufacturing standard	:	MSS SP-95
2.	Material Grade standard	:	ASTM A 105 – For CS fittings ASTM A 182 – For AS & SS fittings
3.	End connections	:	Threading : ANSI B 2.1; Beveled ends: ASME B 16.25
4.	Dimensions	:	As per ENQUIRY & FABRICATION Drawings

**7.3 Forged PIPE FITTINGS [CONCENTRIC REDUCERS / TEE / FULL COUPLING / ELBOW / CAP]**

S.No.	Description	:	Requirement
5.	Manufacturing standard	:	ANSI B 16.11 - for pr. class 3000lbs ANSI B 16.9 - for pr. class 6000lbs & 9000lbs
6.	Material Grade standard	:	ASTM A 105 – For CS fittings ASTM A 182 – For AS & SS fittings
7.	Threading	:	As per ANSI B 2.1
8.	Dimensions	:	As per ENQUIRY & FABRICATION Drawings

**7.4 GATE VALVE (Forged)**

S.No.	Description	:	Requirement
1.	Manufacturing standard	:	API 602 – for pr. class 800, 1500 & 2500
2.	Material Grade standard	:	ASTM A 105 – For CS valves ASTM A 182 – For AS & SS valves
3.	End Connections	:	SW ends : ANSI B 16.11 BW ends : ANSI B 16.25
4.	Body	:	Forged, Leakage class-IV
5.	Dimensions	:	As per ENQUIRY & FABRICATION Drawings

**7.5 ANCHOR BOLT** shall be made from Mild Steel material with Total Length =160mm; Threaded length = 25mm; Thread size = M10; Supply quantity=As per enquiry.

**7.6 U-BOLT**

S.No.	Description	:	Requirement
1.	Material	:	IS 226 supply shall be in galvanized condition along with 4 nuts;
2.	Nuts	:	As per IS 1364 Pt. 6 & IS 4218 – 6H; Thread tolerances applicable after galvanization
3.	U-Bolt Size	:	As per BOM mentioned in various schemes
4.	Dimensions	:	As per FABRICATION Drawings

**7.7 VERTICAL INSERT**

S.No.	Description	:	Requirement
1.	Application	:	Suitable for pressure class 3000
2.	Size, Body material & End connections	:	As per BOM mentioned in various schemes

**7.8 SEAMLESS TUBEs**

S.No.	Description	:	Requirement
1.	Application	:	Seamless, hot finished or cold drawn tube of SS 316L material as per ASTM A 269 & ASTM A 213 (IBR service)
2.	Tube Hardness	:	Up to 200HV & 90 HRB
3.	Size	:	As per BOM mentioned in various schemes
4.	Shipping Length	:	6 meters

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**7.9 TUBE FITTINGS [Female Connector / Male connector / Tube union / Tube cap /Union TEE/ Manifolds]**

S.No.	Description	:	Requirement
1.	Application	:	Shall be designed suitable for pressure class 6000lbs
2.	End connections	:	As per FABRICATION Drawings
3.	Material	:	SS 316
4.	Dimensions	:	As per FABRICATION Drawings

**7.10 GLOBE VALVE**

S.No.	Description	:	Requirement
1.	Manufacturing standard	:	BS 5352 – for pr. class 800, 1500 & 2500
2.	Material Grade standard	:	ASME: SA105 – For CS ASME: SA182 – For AS & SS
3.	End Connections	:	SW ends : ANSI B 16.11 BW ends : ANSI B 16.25
4.	Body	:	Forged, Leakage class-IV
5.	Dimensions	:	As per applicable Standard

**7.11 FLANGE**

S.No.	Description	:	Requirement
1.	Manufacturing standard	:	ANSI B16.5 – for pr. class 800, 1500 & 2500
2.	Material Grade standard	:	ASME: SA105 – For CS ASME: SA182 – For AS & SS
3.	Edge Preparation	:	As per ANSI B16.5
4.	Body	:	Forged
5.	Dimensions	:	As per applicable Standard

**7.12 GASKET, STUD, BOLTS & NUTs**

S.No.	Description	:	Requirement
1.	Gasket Body	:	Non-Asbestos MSW (SS304) + Graphite
2.	Stud & Material	:	A193 Gr. B7
3.	Nuts Material	:	A194 Gr. 2H
4.	Dimensions	:	Suitable to applicable Flange Sizes

**8. INSPECTION & TESTING**

HOOKUP materials shall be subjected to inspection and testing at vendor works by BHEL/Third party Inspector (TPI). Test procedure shall include but not be limited to the following. All the tests being conducted shall be clearly brought out in the Quality Assurance Plan (QAP) by Vendor.

S. No	Test	For	Reference	Scope of inspection
1.	BOM Check	All items	As per P.O. quantity	100% Witness
2.	Visual check	All items	As per P.O. quantity	Witness for 5% qty of each size & type
3.	Dimensional checks	All items	As per fabrication drawings given in this specification	Witness for 5% qty of each size & type
4.	IBR test form IIIC	Not required		
5.	Thickness test	All items	As per applicable standard	5% Witness for each size & type
6.	PMI Test	SS & AS materials	As per applicable standard	100% certificate review & 5% random witness
7.	Hydraulic test	Manifolds, Condensate Chamber and Valve's body & seat	As per applicable standard	100% certificate review & 5% random witness
8.	Leakage test for seat	All Valves	As per applicable standard	100% certificate review
9.	Deleted	Deleted	Deleted	Deleted
10.	Material test	All items (Chemical & Mechanical properties)	As per applicable standard	100% certificate review
11.	Radiography test	Weld joints of Condensate chamber	As per applicable standard	100% certificate review
12.	Liquid penetration test	At knuckle of Elbows, Reducers & neck portions of Tee	As per applicable standard	100% certificate review
13.	Magnetic Particle Test	All Fillet joints	As per applicable standard	100% certificate review

14.	Heat treatment	Forged items	As per applicable standard	100% certificate review
15.	Workmanship, finish, markings	All items	-	100%, witness
16.	Preservation & packing	All items	-	100% review

**9. DOCUMENTATION****9.1 Information** to be included with offer

Vendor shall make the offer in detail, with respect to every item of the Purchaser's specifications. Any offer not conforming to this shall be summarily rejected.

- Duly filled & Signed copy of Check list (To be submitted compulsorily without fail)
- Deviation list, if any (as per "No deviation format" given in this specification). If there are no deviations, bidders shall submit "Deviation format" by mentioning deviations "Nil". (To be submitted compulsorily without fail)
- Unpriced price schedule (To be submitted compulsorily without fail)
- Copy of BHEL specification duly stamped & signed by vendor as a total compliance
- Bill of materials (only for information)

**9.2 Documentation** submission within 2 weeks of placement of LOI (for approval by BHEL and / or BHEL's customer in 4 sets)

- Comprehensive Bill of material along with heat code/numbers
- Comprehensive Quality Assurance plan.
- Packing List (To be submitted compulsorily without fail)

**Notes::**



- All vendor documents of Hookup package and its sub-items shall be submitted to Customer / Consultant for approval during order execution (if applicable). Any comment furnished by Customer / Consultant / BHEL shall be taken care by vendor during ordering execution.
- Further BHEL will provide comments on vendor submitted document within 07 working days for revision & resubmission. Vendor shall follow up with BHEL for non-receipt of comments/approvals.
- Revised drawings / Documents shall be submitted by Bidder in 07 days of receipt of comments / observations from BHEL. BHEL shall revert within 7 days on receipt of these revised documents / drawings from vendor for approvals.
- All the approvals required for manufacturing shall be completed within 2 months from P.O to meet the P.O delivery schedule. Accordingly vendor shall ensure the submission of approval category documents (which are required for manufacturing) and obtain their approvals.
- Vendor shall obtain final approvals on all technical + quality aspect documents before inspection dates.
- It is vendor's responsibility to obtain approvals from BHEL as earliest as possible to meet PO delivery schedules. Accordingly vendor to plan and execute the supplies in time.**

**9.3 Documents** to be submitted during final shop testing & before equipment dispatch. (10 sets + 2 CD ROM)

(Note: 2 sets to be included with item dispatch and balance to BHEL purchase department and submission of these documents is commercially linked)

- All documents approved by BHEL.
- Material test certificates. In case of pipes made from plates, Test certificates as per pipe standard ANSI B36.10 shall be submitted with plate material
- Inspection report
- Guarantee and all test certificates

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10. MARKING

10.1 Each packing shall be marked as (Font Size: as visible with naked eye)

a) Size,

c) Material of Construction,

e) Heat number/code,

b) Pressure class,

d) End Connections,

f) Material code.

10.2 Each Item shall be marked with following details (Font size:8MM)

1) Position No (as per various schemes)

2) Item Name, Material of construction, Size, End connection, pressure class

3) BHEL PO Number,

If space is constraint on the item to be marked, vendor shall provide additional tag plate wired to the each item.

11. PACKING

11.1 Before packing of the material all the tube, tube fittings, Pipe and pipe fitting material shall be dried, cleaned, and entire surface shall be well covered with good quality rust preventive material that will become fluid and run off at 65 Deg C. Pipe threads shall be protected with suitable grease. Openings of the supplied material shall be covered with plastic make dummy plugs to avoid any entry of foreign material.

11.2 BOM listed in each scheme shall be packed material code wise on ONE wooden packing box except pipes/tubes.

11.3 Packing of pipes / tubes shall be as per vendor practice.

11.4 Material shall be packed properly to protect from mechanical damage during transportation and storage for long time. The packing shall be in accomplished with acceptable commercial practices for domestic applications.

11.5 All items shall be marked (stamped/etched) in accordance with the applicable code/standard/specification. In addition, the item code, if available, shall also be marked.

11.6 For ease of identification, the color of painted strip (wherever required) shall be as per the applicable standard.

11.7 Part number/Dispatch link-up of all the equipment's/items supplied and also their co-relation with system/drawing/approved BOQ.

11.8 Paint or ink for marking shall not contain any harmful metal or metal salts which can cause corrosive attack either ordinarily or in service. Special items/smaller items shall have attached corrosion resistant tag providing salient features.

11.9 The equipment shall be transported to site by the vendor in fully assembled condition. However, in case some components are liable to be damaged during transit, the same shall be dismantled and supplied separately, to be reassembled at site the vendor. Assembly of the item supplied loose at site and repairing of any item damaged during transport shall be in the vendor's scope. The vendor shall send each consignment to site with a detailed packing list.

11.10 All the equipment shall be divided into several sections for protection and ease of handling during transportation. The equipment shall be properly packed for transportation by ship/rail or trailer. The equipment shall be wrapped in polythene sheets before being placed in crates/cases to prevent damage to the finish. Crates/cases shall have skid bottom for handling.

11.11 Special notations such as 'Fragile', 'This side up', 'Center of gravity', 'Weight', 'Owner's particulars', 'PO Nos.' etc. shall be clearly marked on the package together with other details as per purchaser order.

11.12 The equipment/items may be stored outdoors for long periods before installation. The packing shall be completely suitable for outdoor storage in areas with heavy rains/high ambient temperature, unless otherwise agreed.

11.13 The following minimum packing procedures shall be followed:-



a) All items shall be dry, clean and free from moisture, dirt and loose foreign material of all kinds.

b) All items shall be protected from rust, corrosion, and mechanical damage during transportation and handling.

c) Each variety and size of item shall be supplied in separate packaging marked with the purchase order no., item code (if available), and the salient specifications.

d) All electrical, instrumentation etc., shall be properly packed to prevent damage during transport, storage, handling at site.



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<p style="writing-mode: vertical-rl; transform: rotate(180deg);"> <b>CONFIDENTIAL AND CONFIDENTIAL</b>          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.       </p>	<p>e) All the items which the Bidders considered liable to be damaged during shipment or storage, shall be packaged for separate shipment. If instruments are removed from the panel, they and their connection shall be suitably tagged to ensure simple re installation at the job site. Each instrument shall be sealed in plastic bags containing moisture absorbing dessicants.</p> <p>f) It shall be bidder's sole responsibility to protect all the material during period of dispatch, storage and erection against corrosion, incidental damage due to vermin, sunlight, rain, high temperature, humid atmosphere, rough handling in transit and including delays in transit.</p> <p>g) Mandatory Spare parts shall be packaged separately and clearly marked as 'Mandatory Spares '.</p> <p>h) Commissioning spares, Tools &amp; tackles to be packed separately &amp; suitably tagged.</p> <p><i>11.14 If <b>mandatory spare items</b> are ordered, same shall be sent in pre-decided lots in containers /secure boxes(wooden) distinctly marked in <b>GREEN color</b> with boldly written "S "mark on each face of the containers /secure boxes(wooden)</i></p> <p><i>11.15 Loose vendor items sent by vendor to sites shall be quantified/numbered/tagged and not merely mentioned as ONE lot of loose items.</i></p> <p><i>11.16 A packing list covering items having shelf life are to be intimated to site. Also, <b>shelf life items</b> shall be packed separately in <b>BLACK color painted box(wooden)</b> for easy identification at site.</i></p> <p><i>11.17 In case of imported/exported items, seaworthy packing shall be done as per specification no: <b>AA0490004 (latest revision)</b> and the type of packing applicable for Hookup Materials is "<u><b>CQ</b></u>". This specification shall be obtained by vendor on request. Packing shall be especially inspected by <b>CQ engineer before dispatch.</b></i></p> <p><b>12. GUARANTEE</b></p> <p>12.1 Guarantee certificate shall furnish a guarantee certificate stating that the fittings supplied shall be suitable for use at the relevant pressure temperature ratings. The guarantee shall be valid for a minimum period of 24 months from the date of supply or 18 months from the date of commissioning whichever is earlier.</p> <p>12.2 In case of any defect in the material during manufacturing process, transportation activities, vendor is sole responsible for the replacement with in a period of 3 weeks from the supply/identified as defective.</p>		

### Variant Table (Main supply)

Variant	Material Code	Description
00	PY9756701005	BOM for Hookup - NTPC Mauda
01	PY9756701013	BOM for Hookup - NTPC Sipat
02	PY9756701021	BOM for Hookup - NTPC Bhilai
03	PY9756701030	BOM for Hookup - North Karanpura
04	PY9756701048	BOM for Hookup – NTPL Tuticorin
05	PY9756701056	BOM for Hookup - TSGENCO Bhadradi FGD
06	PY9756701064	BOM for Hookup - TSGENCO Kothagudem FGD
07	PY9756701072	BOM for Hookup - NSPCL Bhilai FGD
08	PY9756701080	BOM for Hookup - NTPC Barh-I
09	PY9756701099	BOM for Hookup - NTPC Barh-II
10	PY9756701102	BOM for Hookup - NTPC Korba Stage I,II,III
11	PY9756701110	BOM FOR HOOKUP - NTPC Kahalgao
12	PY9756701129	BOM FOR HOOKUP - TANGEDCO North Chennai
13	PY9756701137	BOM FOR HOOKUP - NPGCL Nabinagar
14	PY9756701145	BOM FOR HOOKUP - BRBCL Nabinagar
15	PY9756701153	BOM FOR HOOKUP - NTPC Ramagundam
16	PY9756701161	BOM FOR HOOKUP - RMU Panchet
17	PY9756701170	BOM FOR HOOKUP - Kodayar
18	PY9756701188	BOM FOR HOOKUP - Kuttiyadi
19	PY9756701196	BOM FOR HOOKUP - R & M Chilla
20	PY9756701200	BOM FOR HOOKUP - Rahughat
21	PY9756701218	BOM FOR HOOKUP – Arun III
22	PY9756701226	BOM FOR HOOKUP – Shapurkandi I & II
23	PY9756701234	BOM FOR HOOKUP - Pipalkoti
24	PY9756701242	BOM FOR HOOKUP - Rammam
25	PY9756701250	BOM FOR HOOKUP - WBPCL Sagardighi
26	PY9756701269	BOM FOR HOOKUP - TANGEDCO Udangudi
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### Variant Table (Mandatory spares supply)

Variant	Material Code	Description
36	PY9756701366	BOM for Hookup - NTPC Mauda
37	PY9756701374	BOM for Hookup (Mand Spares) - NTPC Sipat
38	PY9756701382	BOM for Hookup (Mand Spares)- NTPC Bhilai
39	PY9756701390	BOM for Hookup (Mand Spare)- North Karanpura
40	PY9756701404	BOM for Hookup (Mand Spare)– NTPL Tuticorin
41	PY9756701412	BOM for Hookup (Mand Spare)-Bhadradri FGD
42	PY9756701420	BOM for Hookup (Mand Spare)- Kothagudem FGD
43	PY9756701439	BOM for Hookup (Mand Spare)-NSPCL Bhilai FGD
44	PY9756701447	BOM FOR HOOKUP (Mand Spares - NTPC BARH-I
45	PY9756701455	BOM FOR HOOKUP (MAND SPARES)-NTPC BARH-II
46	PY9756701463	BOM for Hookup (Man Spare)-NTPC Korba I,II,III
47	PY9756701471	BOM FOR HOOKUP (Mand Spare)-NTPC Kahalgaon
48	PY9756701480	BOM FOR HOOKUP (Mand spare) North Chennai
49	PY9756701498	BOM FOR HOOKUP(Mand Spare)-NPGCL Nabinagar
50	PY9756701501	BOM FOR HOOKUP (Mand Spare) - BRBCL Nabinagar
51	PY9756701510	BOM FOR HOOKUP (Mand spare) - NTPC Ramagundam
52	PY9756701528	BOM FOR HOOKUP (Mand Spare) - RMU Panchet
53	PY9756701536	BOM FOR HOOKUP (Mand. spare) - Kodayar
54	PY9756701544	BOM FOR HOOKUP(Mand Spare) - Kutiyadi
55	PY9756701552	BOM FOR HOOKUP(Mand Spare) -R & M Chilla
56	PY9756701560	BOM FOR HOOKUP(Mand Spare) - Rahughat
57	PY9756701579	BOM FOR HOOKUP(Mand Spare)– Arun III
58	PY9756701587	BOM FOR HOOKUP(Mand Spare) – Shapurkandi
59	PY9756701595	BOM FOR HOOKUP(Mand Spare) - Pipalkoti
70	PY9756701609	BOM FOR HOOKUP (Mand spare) - Rammam
71	PY9756701617	BOM FOR HOOKUP(Mand Spare)- Sagardighi
72	PY9756701625	BOM FOR HOOKUP - TANGEDCO Udangudi
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**BOM & PRICE BID FORMAT** are enclosed as Annexure-I to this specification.  
**QAP requirements & FORMAT** are enclosed as Annexure-II to this specification

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Rev. No.	01
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Rev. No.	Date	Revision Details	Revised By	Approved By
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00	03.07.23	Original issue	-----	Kamal 
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01	05.08.23	Change in BOM & price bid format-Annexure-I
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## COPYRIGHT AND CONFIDENTIALITY

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<b>FRAMEWORK AGREEMENT FOR FGD FPS PROJECTS</b> <b>BILL OF MATERIAL &amp; PRICE FORMAT FOR HOOK UP MATERIAL</b> <b>MATERIAL CODE-PY9756701994</b>								
							<b>Annexure-I of PY56701</b>	
SI No	ITEM DESCRIPTION	MOC	IBR requirement	SIZE	MU	Total Quantity	Price Weightage Factor	Bidder Confirmation (Quoted)
01	SOCKET	A105	No	15NB SW	No's	1257	8.108%	
02	PIPE NIPPLE (150mm Long)	A105	No	1/2" SCH80, PL x PL	No's	1357	4.697%	
03	PIPE NIPPLE (150mm Long)	A105	No	1/2" SCH80, PL x NPT(M)	No's	791	3.197%	
04	PIPE NIPPLE (150mm Long)	A105	No	1/2" SCH80, NPT(M) x NPT(M)	No's	1756	6.501%	
05	GLOBE VALVE	A105	No	1/2" SW, CL 800	No's	791	26.959%	
06	ELBOW	A105	No	1/2" SW, CL 3000	No's	739	4.720%	
07	ELBOW	A105	No	1/2"NPT(F) X 1/2" NPT(F), CL3000	No's	478	4.219%	
08	EQUAL TEE	A105	No	1/2" SW, CL 3000	No's	56	0.438%	
09	EQUAL TEE	A105	No	1/2"NPT(F) X 1/2" NPT(F), CL3000	No's	39	0.305%	
10	COUPLING (Forged)	A105	No	1/2" SW, CL 3000	No's	56	0.259%	
11	CAP	A105	No	1/2" NPT(F), CL 3000	No's	94	0.442%	
12	PIPE (SMLS)	A105	No	1/2" SCH 80S	Mtrs	324	3.448%	
13	PIPE	GI	No	2" SCH 40	Mtrs	72	1.576%	
14	3-piece Union	SS 316	No	1/2" NPT(F) x 1/2" NPT(F), CL3000	No's	1202	24.023%	
15	FEMALE CONNECTOR	SS 316	No	1/2"NPT(F) x 1/2" OD TUBE, CL3000	No's	56	0.524%	
16	TUBE (SMLS)	SS 316L	No	1/2" OD X 2.1 mm	Mtrs	324	6.678%	
17	MALE CONNECTOR	SS 316	No	1/2"NPT(M) x 1/2" OD TUBE, CL3000	No's	161	1.266%	
18	U-BOLT GALVZD	IS 226	No	1/2"	No's	213	0.561%	
19	ANCHOR BOLT	Chro coated MS	No	M10x160mm	No's	174	0.384%	
20	STR STEEL MS ANGLE(50x50x6)		No		KG's	131	0.277%	
21	STR STEEL 6 mm PLATE		No		KG's	506	1.418%	
<b>TOTAL SUPPLY</b>								
<b>NOTE</b>								
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 <b>Annexure-A</b> .							

	<b>FRAMEWORK AGREEMENT FOR FGD FPS PROJECTS</b> <b>BILL OF MATERIAL &amp; PRICE FORMAT FOR HOOK UP MATERIAL</b> <b>MATERIAL CODE-PY9756701994</b>			<b>Annexure-I of PY56701</b>
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 <b>Annexure-A to Price Bid Format</b>										
MATERIAL CODE-PY9756701994					PY9756701005	PY9756701366	PY9756701013	PY9756701374	PY9756701021	PY9756701382
SI No	ITEM DESCRIPTION	MOC	SIZE	MU	1 NTPC Mauda- Main Supply	1 NTPC Mauda- Mandatory spare Supply	2 NTPC Sipat Main Supply	2 NTPC Sipat Mandatory Spare Supply	3 NTPC Bhilai Main Supply	3 NTPC Bhilai Mandatory Spare Supply
01	SOCKLET	A105	15NB SW	No's	11	2	13	2	13	2
02	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, PL x PL	No's	22	3	26	3	26	3
03	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, PL x NPT(M)	No's	11	2	13	2	13	2
04	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, NPT(M) x NPT(M)	No's	11	2	13	2	13	2
05	GLOBE VALVE	A105	1/2" SW, CL 800	No's	11	2	13	2	13	2
06	ELBOW	A105	1/2" SW, CL 3000	No's	11	2	13	2	13	2
07	ELBOW	A105	1/2"NPT(F) X 1/2" NPT(F), CL3000	No's						
08	EQUAL TEE	A105	1/2" SW, CL 3000	No's						
09	EQUAL TEE	A105	1/2"NPT(F) X 1/2" NPT(F), CL3000	No's						
10	COUPLING (Forged)	A105	1/2" SW, CL 3000	No's						
11	CAP	A105	1/2" NPT(F), CL 3000	No's						
12	PIPE (SMLS)	A105	1/2" SCH 80S	Mtrs						
13	PIPE	GI	2" SCH 40	Mtrs						
14	3-piece Union	SS 316	1/2" NPT(F) x 1/2" NPT(F), CL3000	No's	11	2	13	2	13	2
15	FEMALE CONNECTOR	SS 316	1/2"NPT(F) x 1/2" OD TUBE, CL3000	No's						
16	TUBE (SMLS)	SS 316L	1/2" OD X 2.1 mm	Mtrs						
17	MALE CONNECTOR	SS 316	1/2"NPT(M) x 1/2" OD TUBE, CL3000	No's						
18	U-BOLT GALVZD	IS 226	1/2"	No's						
19	ANCHOR BOLT	Chro coated	M10x160mm	No's						
20	STR STEEL MS ANGLE(50x50x6)			KG's						
21	STR STEEL 6 mm PLATE			KG's						

**NOTES**

- 1 The above list of Quantiy , project/customer is tentative only. Final details of quantity, Project/ Customer shall be informed at the time of PO
- 2 The Project/ Customer are subject to change based on buisness scenario of BHEL.

DISTRIBUTION OF FRAMEWORK ITEMS ACROSS PROJECTS Annexure-A to Price Bid Format										
MATERIAL CODE-PY9756701994					PY9756701030	PY9756701390	PY9756701048	PY9756701404	PY9756701056	PY9756701412
SI No	ITEM DESCRIPTION	MOC	SIZE	MU	4 North Karanpura Main Supply	4 North Karanpura Mandatory Spare Supply	5 NTPL Tuticorin Main Supply	5 NTPL Tuticorin Mandatory Spare Supply	6 TSGENCO Bhadradi FGD Main Supply	6 TSGENCO Bhadradi FGD Mandatory Spare Supply
01	SOCKLET	A105	15NB SW	No's	15	2	4	1	14	2
02	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, PL x PL	No's	30	3	8	1	28	3
03	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, PL x NPT(M)	No's	15	2	4	1	14	2
04	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, NPT(M) x NPT(M)	No's	15	2	4	1	14	2
05	GLOBE VALVE	A105	1/2" SW, CL 800	No's	15	2	4	1	14	2
06	ELBOW	A105	1/2" SW, CL 3000	No's	15	2	4	1	14	2
07	ELBOW	A105	1/2"NPT(F) X 1/2" NPT(F), CL3000	No's						
08	EQUAL TEE	A105	1/2" SW, CL 3000	No's						
09	EQUAL TEE	A105	1/2"NPT(F) X 1/2" NPT(F), CL3000	No's						
10	COUPLING (Forged)	A105	1/2" SW, CL 3000	No's						
11	CAP	A105	1/2" NPT(F), CL 3000	No's						
12	PIPE (SMLS)	A105	1/2" SCH 80S	Mtrs						
13	PIPE	GI	2" SCH 40	Mtrs						
14	3-piece Union	SS 316	1/2" NPT(F) x 1/2" NPT(F), CL3000	No's	15	2	4	1	14	2
15	FEMALE CONNECTOR	SS 316	1/2"NPT(F) x 1/2" OD TUBE, CL3000	No's						
16	TUBE (SMLS)	SS 316L	1/2" OD X 2.1 mm	Mtrs						
17	MALE CONNECTOR	SS 316	1/2"NPT(M) x 1/2" OD TUBE, CL3000	No's						
18	U-BOLT GALVZD	IS 226	1/2"	No's						
19	ANCHOR BOLT	Chro coated	M10x160mm	No's						
20	STR STEEL MS ANGLE(50x50x6)			KG's						
21	STR STEEL 6 mm PLATE			KG's						

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DISTRIBUTION OF FRAMEWORK ITEMS ACROSS PROJECTS Annexure-A to Price Bid Format										
MATERIAL CODE-PY9756701994					PY9756701064	PY9756701420	PY9756701072	PY9756701439	PY9756701080	PY9756701447
SI No	ITEM DESCRIPTION	MOC	SIZE	MU	7 TSGENCO Kothagudem FGD Main Supply	7 TSGENCO Kothagudem FGD Mandatory	8 NSPCL Bhilai FGD Main Supply	8 NSPCL Bhilai FGD Mandatory Spare Supply	9 NTPC Barh-I Main Supply	9 NTPC Barh-I Mandatory Spare Supply
01	SOCKET	A105	15NB SW	No's	4	1	16	2	14	2
02	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, PL x PL	No's	8	1	32	3	28	3
03	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, PL x NPT(M)	No's	4	1	16	2	14	2
04	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, NPT(M) x NPT(M)	No's	4	1	16	2	14	2
05	GLOBE VALVE	A105	1/2" SW, CL 800	No's	4	1	16	2	14	2
06	ELBOW	A105	1/2" SW, CL 3000	No's	4	1	16	2	14	2
07	ELBOW	A105	1/2"NPT(F) X 1/2" NPT(F), CL3000	No's						
08	EQUAL TEE	A105	1/2" SW, CL 3000	No's						
09	EQUAL TEE	A105	1/2"NPT(F) X 1/2" NPT(F), CL3000	No's						
10	COUPLING (Forged)	A105	1/2" SW, CL 3000	No's						
11	CAP	A105	1/2" NPT(F), CL 3000	No's						
12	PIPE (SMLS)	A105	1/2" SCH 80S	Mtrs						
13	PIPE	GI	2" SCH 40	Mtrs						
14	3-piece Union	SS 316	1/2" NPT(F) x 1/2" NPT(F), CL3000	No's	4	1	16	2	14	2
15	FEMALE CONNECTOR	SS 316	1/2"NPT(F) x 1/2" OD TUBE, CL3000	No's						
16	TUBE (SMLS)	SS 316L	1/2" OD X 2.1 mm	Mtrs						
17	MALE CONNECTOR	SS 316	1/2"NPT(M) x 1/2" OD TUBE, CL3000	No's						
18	U-BOLT GALVZD	IS 226	1/2"	No's						
19	ANCHOR BOLT	Chro coated	M10x160mm	No's						
20	STR STEEL MS ANGLE(50x50x6)			KG's						
21	STR STEEL 6 mm PLATE			KG's						

**NOTES**

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DISTRIBUTION OF FRAMEWORK ITEMS ACROSS PROJECTS <b>Annexure-A to Price Bid Format</b>										
MATERIAL CODE-PY9756701994					PY9756701099	PY9756701455	PY9756701102	PY9756701463	PY9756701110	PY9756701471
SI No	ITEM DESCRIPTION	MOC	SIZE	MU	10 NTPC Barh-II Main Supply	10 NTPC Barh-II Mandatory Spare Supply	11 NTPC Korba Stage I,II,III Main Supply	11 NTPC Korba Stage I,II,III Mandatory Spare Supply	12 NTPC Kahalgaon Main Supply	12 NTPC Kahalgaon Mandatory Spare Supply
01	SOCKET	A105	15NB SW	No's	16	2	42	5	31	4
02	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, PL x PL	No's	32	4	84	9	62	7
03	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, PL x NPT(M)	No's	16	2	42	5	31	2
04	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, NPT(M) x NPT(M)	No's	16	2	42	5	31	2
05	GLOBE VALVE	A105	1/2" SW, CL 800	No's	16	2	42	5	31	2
06	ELBOW	A105	1/2" SW, CL 3000	No's	16	2	42	5	31	2
07	ELBOW	A105	1/2"NPT(F) X 1/2" NPT(F), CL3000	No's						
08	EQUAL TEE	A105	1/2" SW, CL 3000	No's						
09	EQUAL TEE	A105	1/2"NPT(F) X 1/2" NPT(F), CL3000	No's						
10	COUPLING (Forged)	A105	1/2" SW, CL 3000	No's						
11	CAP	A105	1/2" NPT(F), CL 3000	No's						
12	PIPE (SMLS)	A105	1/2" SCH 80S	Mtrs						
13	PIPE	GI	2" SCH 40	Mtrs						
14	3-piece Union	SS 316	1/2" NPT(F) x 1/2" NPT(F), CL3000	No's	16	2	42	5	31	2
15	FEMALE CONNECTOR	SS 316	1/2"NPT(F) x 1/2" OD TUBE, CL3000	No's						
16	TUBE (SMLS)	SS 316L	1/2" OD X 2.1 mm	Mtrs						
17	MALE CONNECTOR	SS 316	1/2"NPT(M) x 1/2" OD TUBE, CL3000	No's						
18	U-BOLT GALVZD	IS 226	1/2"	No's						
19	ANCHOR BOLT	Chro coated	M10x160mm	No's						
20	STR STEEL MS ANGLE(50x50x6)			KG's						
21	STR STEEL 6 mm PLATE			KG's						

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DISTRIBUTION OF FRAMEWORK ITEMS ACROSS PROJECTS <b>Annexure-A to Price Bid Format</b>										
MATERIAL CODE-PY9756701994					PY9756701129	PY9756701480	PY9756701137	PY9756701498	PY9756701145	PY9756701501
SI No	ITEM DESCRIPTION	MOC	SIZE	MU	13 TANGEDCO North Chennai Main Supply	13 TANGEDCO North Chennai Mandatory Spare Supply	14 NPGCL Nabinagar Main Supply	14 NPGCL Nabinagar Mandatory Spare Supply	15 BRBCL Nabinagar Main Supply	15 BRBCL Nabinagar Mandatory Spare Supply
01	SOCKET	A105	15NB SW	No's	16	2	15	2	9	1
02	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, PL x PL	No's	32	4	30	3	18	2
03	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, PL x NPT(M)	No's	16	2	15	2	9	1
04	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, NPT(M) x NPT(M)	No's	16	2	15	2	9	1
05	GLOBE VALVE	A105	1/2" SW, CL 800	No's	16	2	15	2	9	1
06	ELBOW	A105	1/2" SW, CL 3000	No's	16	2	15	2	9	1
07	ELBOW	A105	1/2"NPT(F) X 1/2" NPT(F), CL3000	No's						
08	EQUAL TEE	A105	1/2" SW, CL 3000	No's						
09	EQUAL TEE	A105	1/2"NPT(F) X 1/2" NPT(F), CL3000	No's						
10	COUPLING (Forged)	A105	1/2" SW, CL 3000	No's						
11	CAP	A105	1/2" NPT(F), CL 3000	No's						
12	PIPE (SMLS)	A105	1/2" SCH 80S	Mtrs						
13	PIPE	GI	2" SCH 40	Mtrs						
14	3-piece Union	SS 316	1/2" NPT(F) x 1/2" NPT(F), CL3000	No's	16	2	15	2	9	1
15	FEMALE CONNECTOR	SS 316	1/2"NPT(F) x 1/2" OD TUBE, CL3000	No's						
16	TUBE (SMLS)	SS 316L	1/2" OD X 2.1 mm	Mtrs						
17	MALE CONNECTOR	SS 316	1/2"NPT(M) x 1/2" OD TUBE, CL3000	No's						
18	U-BOLT GALVZD	IS 226	1/2"	No's						
19	ANCHOR BOLT	Chro coated	M10x160mm	No's						
20	STR STEEL MS ANGLE(50x50x6)			KG's						
21	STR STEEL 6 mm PLATE			KG's						

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DISTRIBUTION OF FRAMEWORK ITEMS ACROSS PROJECTS <b>Annexure-A to Price Bid Format</b>										
MATERIAL CODE-PY9756701994					PY9756701153	PY9756701510	PY9756701161	PY9756701528	PY9756701170	PY9756701536
SI No	ITEM DESCRIPTION	MOC	SIZE	MU	16 NTPC Ramagundam Main Supply	16 NTPC Ramagundam Mandatory Spare Supply	17 RMU Panchet Main Supply	17 RMU Panchet Mandatory Spare Supply	18 Kodayar Main Supply	18 Kodayar Mandatory Spare Supply
01	SOCKET	A105	15NB SW	No's	29	3	33	4	18	2
02	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, PL x PL	No's	58	6	66	7	32	4
03	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, PL x NPT(M)	No's	29	3	33	4	20	2
04	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, NPT(M) x NPT(M)	No's	29	3	33	4	16	2
05	GLOBE VALVE	A105	1/2" SW, CL 800	No's	29	3	33	4	20	2
06	ELBOW	A105	1/2" SW, CL 3000	No's	29	3	33	4	18	2
07	ELBOW	A105	1/2"NPT(F) X 1/2" NPT(F), CL3000	No's						
08	EQUAL TEE	A105	1/2" SW, CL 3000	No's					2	1
09	EQUAL TEE	A105	1/2"NPT(F) X 1/2" NPT(F), CL3000	No's						
10	COUPLING (Forged)	A105	1/2" SW, CL 3000	No's					2	1
11	CAP	A105	1/2" NPT(F), CL 3000	No's					2	1
12	PIPE (SMLS)	A105	1/2" SCH 80S	Mtrs					12	1
13	PIPE	GI	2" SCH 40	Mtrs					1.5	1
14	3-piece Union	SS 316	1/2" NPT(F) x 1/2" NPT(F), CL3000	No's	29	3	33	4	16	2
15	FEMALE CONNECTOR	SS 316	1/2"NPT(F) x 1/2" OD TUBE, CL3000	No's					2	1
16	TUBE (SMLS)	SS 316L	1/2" OD X 2.1 mm	Mtrs					12	2
17	MALE CONNECTOR	SS 316	1/2"NPT(M) x 1/2" OD TUBE, CL3000	No's					6	1
18	U-BOLT GALVZD	IS 226	1/2"	No's					8	1
19	ANCHOR BOLT	Chro coated	M10x160mm	No's					4	1
20	STR STEEL MS ANGLE(50x50x6)			KG's					2.7	1
21	STR STEEL 6 mm PLATE			KG's					11.7	1

**NOTES**

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DISTRIBUTION OF FRAMEWORK ITEMS ACROSS PROJECTS Annexure-A to Price Bid Format										
MATERIAL CODE-PY9756701994					PY9756701188	PY9756701544	PY9756701196	PY9756701552	PY9756701200	PY9756701560
SI No	ITEM DESCRIPTION	MOC	SIZE	MU	19 Kuttiyadi Main Supply	19 Kuttiyadi Mandatory Spare Supply	20 R & M Chilla Main Supply	20 R & M Chilla Mandatory Spare Supply	21 Rahughat Main Supply	21 Rahughat Mandatory Spare Supply
01	SOCKET	A105	15NB SW	No's	8	1	41	5	8	1
02	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, PL x PL	No's	16	2	82	7	16	2
03	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, PL x NPT(M)	No's	8	1	41	5	8	1
04	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, NPT(M) x NPT(M)	No's	8	1	41	5	8	1
05	GLOBE VALVE	A105	1/2" SW, CL 800	No's	8	1	41	5	8	1
06	ELBOW	A105	1/2" SW, CL 3000	No's	8	1	41	5	8	1
07	ELBOW	A105	1/2"NPT(F) X 1/2" NPT(F), CL3000	No's						
08	EQUAL TEE	A105	1/2" SW, CL 3000	No's						
09	EQUAL TEE	A105	1/2"NPT(F) X 1/2" NPT(F), CL3000	No's						
10	COUPLING (Forged)	A105	1/2" SW, CL 3000	No's						
11	CAP	A105	1/2" NPT(F), CL 3000	No's						
12	PIPE (SMLS)	A105	1/2" SCH 80S	Mtrs						
13	PIPE	GI	2" SCH 40	Mtrs						
14	3-piece Union	SS 316	1/2" NPT(F) x 1/2" NPT(F), CL3000	No's	8	1	41	5	8	1
15	FEMALE CONNECTOR	SS 316	1/2"NPT(F) x 1/2" OD TUBE, CL3000	No's						
16	TUBE (SMLS)	SS 316L	1/2" OD X 2.1 mm	Mtrs						
17	MALE CONNECTOR	SS 316	1/2"NPT(M) x 1/2" OD TUBE, CL3000	No's						
18	U-BOLT GALVZD	IS 226	1/2"	No's						
19	ANCHOR BOLT	Chro coated	M10x160mm	No's						
20	STR STEEL MS ANGLE(50x50x6)			KG's						
21	STR STEEL 6 mm PLATE			KG's						

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- 1 The above list of Quantity, project/customer is tentative only. Final details of quantity, Project/ Customer
- 2 The Project/ Customer are subject to change based on business scenario of BHEL.

DISTRIBUTION OF FRAMEWORK ITEMS ACROSS PROJECTS <b>Annexure-A to Price Bid Format</b>										
MATERIAL CODE-PY9756701994					PY9756701218	PY9756701579	PY9756701226	PY9756701587	PY9756701234	PY9756701595
Sl No	ITEM DESCRIPTION	MOC	SIZE	MU	22 Arun III Main Supply	22 Arun III Mandatory Spare Supply	23 Shapurkandi I & II Main Supply	23 Shapurkandi I & II Mandatory Spare Supply	24 Pipalkoti Main Supply	24 Pipalkoti Mandatory Spare Supply
01	SOCKET	A105	15NB SW	No's	50	5	42	5	36	4
02	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, PL x PL	No's	100	10	76	8	64	7
03	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, PL x NPT(M)	No's	50	5	46	5	40	4
04	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, NPT(M) x NPT(M)	No's	50	5	38	4	32	4
05	GLOBE VALVE	A105	1/2" SW, CL 800	No's	50	5	46	5	40	4
06	ELBOW	A105	1/2" SW, CL 3000	No's	50	5	42	5	36	4
07	ELBOW	A105	1/2"NPT(F) X 1/2" NPT(F), CL3000	No's						
08	EQUAL TEE	A105	1/2" SW, CL 3000	No's			4	1	4	1
09	EQUAL TEE	A105	1/2"NPT(F) X 1/2" NPT(F), CL3000	No's						
10	COUPLING (Forged)	A105	1/2" SW, CL 3000	No's			4	1	4	1
11	CAP	A105	1/2" NPT(F), CL 3000	No's			4	1	4	1
12	PIPE (SMLS)	A105	1/2" SCH 80S	Mtrs			24	3	24	3
13	PIPE	GI	2" SCH 40	Mtrs			3	1	3	1
14	3-piece Union	SS 316	1/2" NPT(F) x 1/2" NPT(F), CL3000	No's	50	5	38	4	32	4
15	FEMALE CONNECTOR	SS 316	1/2"NPT(F) x 1/2" OD TUBE, CL3000	No's			4	1	4	1
16	TUBE (SMLS)	SS 316L	1/2" OD X 2.1 mm	Mtrs			24	3	24	3
17	MALE CONNECTOR	SS 316	1/2"NPT(M) x 1/2" OD TUBE, CL3000	No's			12	2	12	2
18	U-BOLT GALVZD	IS 226	1/2"	No's			16	2	16	2
19	ANCHOR BOLT	Chro coated	M10x160mm	No's			8	1	8	1
20	STR STEEL MS ANGLE(50x50x6)			KG's			5.4	6	5.4	6
21	STR STEEL 6 mm PLATE			KG's			23.4	4	23.4	3


**NOTES**

- 1 The above list of Quantiy , project/customer is tentative only. Final details of quantity, Project/ Customer
- 2 The Project/ Customer are subject to change based on buisness scenario of BHEL.


DISTRIBUTION OF FRAMEWORK ITEMS ACROSS PROJECTS Annexure-A to Price Bid Format										
MATERIAL CODE-PY9756701994					PY9756701242	PY9756701609	PY9756701250	PY9756701617	PY9756701269	PY9756701625
SI No	ITEM DESCRIPTION	MOC	SIZE	MU	25 Rammam Main Supply	25 Rammam Mandatory Spare Supply	26 WBPDC Sagardighi Main Supply	26 WBPDC Sagardighi Mandatory Spare Supply	27 TANGEDCO Udangudi Main Supply	27 TANGEDCO Udangudi Mandatory Spare Supply
01	SOCKET	A105	15NB SW	No's	45	5	282	29	305	31
02	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, PL x PL	No's	90	9	120	12	40	5
03	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, PL x NPT(M)	No's	45	5	64	7	92	10
04	PIPE NIPPLE (150mm Long)	A105	1/2" SCH80, NPT(M) x NPT(M)	No's	45	5	535	54	518	52
05	GLOBE VALVE	A105	1/2" SW, CL 800	No's	45	5	64	7	92	10
06	ELBOW	A105	1/2" SW, CL 3000	No's	45	5	62	7	56	6
07	ELBOW	A105	1/2"NPT(F) X 1/2" NPT(F), CL3000	No's			185	19	249	25
08	EQUAL TEE	A105	1/2" SW, CL 3000	No's			2	1	36	4
09	EQUAL TEE	A105	1/2"NPT(F) X 1/2" NPT(F), CL3000	No's			35	4		
10	COUPLING (Forged)	A105	1/2" SW, CL 3000	No's			2	1	36	4
11	CAP	A105	1/2" NPT(F), CL 3000	No's			37	4	36	4
12	PIPE (SMLS)	A105	1/2" SCH 80S	Mtrs			12	2	216	22
13	PIPE	GI	2" SCH 40	Mtrs			1.5	1	49.5	5
14	3-piece Union	SS 316	1/2" NPT(F) x 1/2" NPT(F), CL3000	No's	45	5	280	29	269	27
15	FEMALE CONNECTOR	SS 316	1/2"NPT(F) x 1/2" OD TUBE, CL3000	No's			2	1	36	4
16	TUBE (SMLS)	SS 316L	1/2" OD X 2.1 mm	Mtrs			12	2	216	22
17	MALE CONNECTOR	SS 316	1/2"NPT(M) x 1/2" OD TUBE, CL3000	No's			6	1	108	11
18	U-BOLT GALVZD	IS 226	1/2"	No's			8	1	144	15
19	ANCHOR BOLT	Chro coated	M10x160mm	No's			4	1	132	14
20	STR STEEL MS ANGLE(50x50x6)			KG's			2.7	3	89.1	9
21	STR STEEL 6 mm PLATE			KG's			11.7	2	386.1	39


**NOTES**

- 1 The above list of Quantiy , project/customer is tentative only. Final details of quantity, Project/ Customer
- 2 The Project/ Customer are subject to change based on buisness scenario of BHEL.

TD-201 Rev No. 00 Form No.		<b>PRODUCT STANDARD</b> PROJECT ENGINEERING & SYSTEMS DIVISION HYDERABAD	ANNEXURE
			Rev No. 00
			Page 1 of 3
<b>COPYRIGHT AND CONFIDENTIAL</b> 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.	<div>QAP GUIDELINES &amp; FORMAT</div> <div>( ANNEXURE )</div> <p>The QAP format and guidelines for filling up the format shall be used by vendor for preparation and submission of QAP after order placement.</p> <p><b>Note :</b></p> <ol style="list-style-type: none"><li>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.</li><li>2. No deviation to reference document is acceptable.</li></ol>		




Form No.	 HYDERABAD	<b>PRODUCT STANDARD</b> PROJECT ENGINEERING & SYSTEMS DIVISION HYDERABAD	ANNEXURE
			Rev No. 00
			Page 2 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.	<p style="text-align: center;"><b><u>GUIDELINES TO VENDORS FOR PREPARATION OF QUALITY ASSURANCE PLAN</u></b></p> <ol style="list-style-type: none"> <li>QAP shall be made in landscape mode on A4 size paper as per the format enclosed. Font size shall be minimum 10.</li> <li>Each page of QAP shall contain the following information.           <ol style="list-style-type: none"> <li>Vendor's name &amp; address.</li> <li>Customer: BHEL, Hyderabad.</li> <li>Project.</li> <li>BHEL Product Standard Number/revision number as referred in P.O.</li> <li>BHEL Purchase Order Number &amp; Date.</li> <li>Product as per P.O. description.</li> <li>QAP Number (unique and shall not repeat)/revision number/date.</li> <li>Page number and number of pages</li> </ol> </li> <li>QAP shall contain four parts / stages as follows.           <ol style="list-style-type: none"> <li>Raw materials and bought out items.</li> <li>In process Control / Inspection.</li> <li>Final assembly, Inspection &amp; Testing.</li> <li>Painting, preservation &amp; packing.</li> </ol> </li> <li>Under 'Component', indicate name of the component (say casing, rotor, pressure gauge, etc).</li> <li>Under 'Characteristics', indicate appropriately (say chemical analysis, mechanical properties, NDT (UT,DP etc.), hydrostatic test, calibration check etc.)</li> <li>Under 'Class', indicate minor, major or critical depending on the importance of characteristic.</li> <li>Under 'Type of check', indicate appropriately (say chemical, mechanical, UT, DP etc.)</li> <li>Under 'Quantum of check', indicate appropriately (say 100%, 10%, sample, per melt, per heat, all pieces etc.)</li> <li>Under 'Reference document' and 'Acceptance norms', appropriate National &amp; 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 &amp; approval by our Engineering dept.</li> <li>Under 'Format of record', indicate appropriately supplier's test certificate, calibration certificate, lab report, inspection report etc.</li> <li>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)</li> </ol>		
	Ref. Doc		

Form No.	 HYDERABAD	<b>PRODUCT STANDARD</b> PROJECT ENGINEERING & SYSTEMS DIVISION HYDERABAD	ANNEXURE
			Rev No. 00
			Page 3 of 3
<b>COPYRIGHT AND CONFIDENTIAL</b> 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.	<p>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.</p> <p>12. Under 'D' please put ( <input type="checkbox"/> Tick) against each characteristic where vendor proposes to submit test certificate/report etc. OR as required as per BHEL Specification.</p> <p>13. Vendor's signature &amp; stamp should be available on each page of QAP.</p> <p>14. Vendor should read the BHEL Product Standard thoroughly and QAP should be made only inline and relevant to the Specification &amp; Approved Drawings.</p> <p>15.The following operations/characteristics/check points may be included (AS APPROPRIATE)</p> <ul style="list-style-type: none"> <li>a) Visual check</li> <li>b) Dimensional check</li> <li>c) Mechanical and Chemical properties.</li> <li>d) Surface preparation before painting (by chemical cleaning, sand blasting, shot blasting etc. as the case may be.)</li> <li>e) Painting check for shade, Dry Film Thickness (DFT), Adhesion/ peel off test etc.</li> <li>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.</li> <li>g) Verification of test certificate for protection class for the enclosures.</li> <li>h) Mechanical functioning of switches.</li> <li>i) Continuity of earthing and provision of earth points.</li> <li>j) Colour coding of wiring, size, tightness &amp; dressing of wiring.</li> <li>k) Review of test certificates of assembled items, raw materials, internal test reports etc.</li> <li>l) Witness of functional checks, which may include mechanical run &amp; electrical run, H.V.test, IR measurement, Electrical and Mechanical tests etc.</li> <li>m) PQR, WPS, Welder Qualification Record, welding records (fit up, DP) etc.</li> <li>n) Material identification ( for punch marks of serial numbers, Heat No, Melt No, Inspector's stamp etc.)</li> <li>o) Hydraulic Pressure Test, Pneumatic Pressure Test, Liquid Penetration Examination and other Non Destructive Tests.</li> <li>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)</li> <li>q) All tests as per BHEL Product Standard &amp; approved drawings including Type tests and Routine tests on individual items and on System as a whole.</li> <li>r) Packing and Preservation.</li> </ul> <p>16. <b>QAP Format enclosed.</b></p> <p>17. <b>Typical Manufacturing QAP is attached.</b></p>		
	Ref. Doc		

VENDOR'S NAME & ADDRESS:			<b>MANUFACTURING QUALITY PLAN</b>						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	<b>RAW MATERIALS &amp; BOUGHT OUT ITEMS</b>												
2.0	<b>INPROCESS INSPECTION</b>												
3.0	<b>FINAL INSPECTION &amp; TESTING</b>												
4.0	<b>PRESERVATION &amp; PACKING</b>												


**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

		STANDARD MANUFACTURING QUALITY PLAN						MQP. NO.: PESD/QA/CP/009					
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032			PRODUCT: INSTRUEMENT HOOK UP PACKAGE			REV NO: 01		DATE: 03.09.22			
								PAGE 1 OF 6					
SL NO	COMPONENT S	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	*D	AGENCY			REMARK S
										P	W	V	


FINAL INSPECTION & TESTING													
1.0	ALL ITEMS	CHEMICAL & MECHANICAL PROPERTIES	MAJOR	CHEMICAL & MECHANICAL	100%	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	RMTC	√	2		1	
2.0	VALVES	, BOM CHECK, WORKMANSHIP, FINISH, MARKING	MAJOR	VISUAL	100%	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	IR	√	2	1		100% witness by 1
		VISUAL CHECK, ,DIMENSIONAL CHECK	MAJOR	VISUAL	100%	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	IR	√	2	1		5% witness by 1

LEGEND: P: PERFORM, W: WITNESS, V: VERIFICATION. 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	REVIEWED BY	APPROVED BY
	BHEL QA SIGN & STAMP	BHEL ENGINEERING SIGN & STAMP	BHEL HOS-QA SIGN & STAMP

		STANDARD MANUFACTURING QUALITY PLAN						MQP. NO.: PESD/QA/CP/009					
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032			PRODUCT: INSTRUEMENT HOOK UP PACKAGE			REV NO: 01		DATE: 03.09.22			
								PAGE 2 OF 6					
SL NO	COMPONENT S	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	*D	AGENCY			REMARK S
										P	W	V	


		HYDRO TEST AND TESTS AS PER SPEC INSP TESTING CLAUSE	MAJOR	TEST	100%	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	IR	√	2	1		5% witness by 1
3.0	PIPE & PIPE FITTINGS	BOM CHECK, WORKMANSHIP, FINISH, MARKING	MAJOR	VISUAL	100%	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	IR	√	2	1		100% witness by 1
		VISUAL CHECK, DIMENSIONAL CHECK	MAJOR	VISUAL	100%	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	IR	√	2	1		5% witness by 1
		HYDRO TEST AND TESTS AS PER SPEC INSP TESTING CLAUSE	MAJOR	TEST	100%	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	IR	√	2	1		5% witness by 1

LEGEND: P: PERFORM, W: WITNESS, V: VERIFICATION. 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		REVIEWED BY		APPROVED BY			
					BHEL QA SIGN & STAMP		BHEL ENGINEERING SIGN & STAMP		BHEL HOS-QA SIGN & STAMP			

		STANDARD MANUFACTURING QUALITY PLAN						MQP. NO.: PESD/QA/CP/009					
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032			PRODUCT: INSTRUMENT HOOK UP PACKAGE			REV NO: 01		DATE: 03.09.22			
								PAGE 3 OF 6					
SL NO	COMPONENT S	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	*D	AGENCY			REMARK S
										P	W	V	


4.0	TUBE & TUBE FITTINGS	BOM CHECK, WORKMANSHIP, FINISH, MARKING	MAJOR	VISUAL	100%	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	IR	√	2	1		100% witness by 1
		VISUAL CHECK , DIMENSIONAL CHECK	MAJOR	VISUAL	100%	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	IR	√	2	1		5% witness by 1
		HYDRO TEST AND TESTS AS PER SPEC INSP TESTING CLAUSE	MAJOR	TEST	100%		BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	IR	√	2	1		5% witness by 1
5.0	INSTRUMENT MOUNTING HARDWARE	, BOM CHECK, WORKMANSHIP, FINISH, MARKING	MAJOR	VISUAL	100%	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	IR	√	2	1		100% witness by 1

LEGEND: P: PERFORM, W: WITNESS, V: VERIFICATION. 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	REVIEWEED BY	APPROVED BY
	BHEL QA SIGN & STAMP	BHEL ENGINEERING SIGN & STAMP	BHEL HOS-QA SIGN & STAMP

		STANDARD MANUFACTURING QUALITY PLAN						MQP. NO.: PESD/QA/CP/009					
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032			PRODUCT: INSTRUEMENT HOOK UP PACKAGE			REV NO: 01		DATE: 03.09.22			
								PAGE 4 OF 6					
SL NO	COMPONENT S	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	*D	AGENCY			REMARK S
										P	W	V	

		VISUAL CHECK, DIMENSIONAL CHECK	MAJOR	VISUAL	100%	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	IR	√	2	1		5% witness by 1
		HYDRO TEST AND TESTS AS PER SPEC INSP TESTING CLAUSE	MAJOR	TEST	100%	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	IR	√	2	1		5% witness by 1
6.0	CONDENSATE CHAMBER	BOM CHECK, WORKMANSHIP, FINISH, MARKING	MAJOR	VISUAL	100%	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	IR	√	2	1		100% witness by 1
		VISUAL CHECK, DIMENSIONAL CHECK	MAJOR	VISUAL	100%	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	IR	√	2	1		5% witness by 1

LEGEND: P: PERFORM, W: WITNESS, V: VERIFICATION. 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	REVIEWEED BY	APPROVED BY
	BHEL QA SIGN & STAMP	BHEL ENGINEERING SIGN & STAMP	BHEL HOS-QA SIGN & STAMP


		<b>STANDARD MANUFACTURING QUALITY PLAN</b>						MQP. NO.: PESD/QA/CP/009					
								REV NO: 01		DATE: 03.09.22			
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032				PRODUCT: INSTRUEMENT HOOK UP PACKAGE		PAGE 5 OF 6					
SL NO	COMPONENT S	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	*D	AGENCY			REMARK S
										P	W	V	
		HYDRO TEST AND TESTS AS PER SPEC INSP TESTING CLAUSE	MAJOR	TEST	100%	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	TC	√	2	1		5% witness by 1
<b>PRESERVATION &amp; PACKING</b>													
		PACKING* (Soundness)	MAJOR	VISUAL	100%	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	BHEL SPEC./ APPD DRAWING/ APPD DATASHEET	REPORT/ PACKING LIST	√	2		1	

**Notes:-**

1. This Standard MQP should be read along 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 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.
4. Only type test certificate of same design and same Material of Construction of equipment to be submitted, wherever required.
5. All the relevant test reports /certificates shall be submitted during inspection. The reviewed and certified documents by BHEL/TPIA/Customer shall be submitted to BHEL as documentation package.
6. All sub-ordered items, bought out items, electrical & instrumentation Items shall be procured from approved / agreed vendor list with BHEL/BHEL's Customer.

LEGEND: P: PERFORM, W: WITNESS, V: VERIFICATION. 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	REVIEWEED BY	APPROVED BY
	BHEL QA SIGN & STAMP	BHEL ENGINEERING SIGN & STAMP	BHEL HOS-QA SIGN & STAMP



		<b>STANDARD MANUFACTURING QUALITY PLAN</b>						MQP. NO.: PESD/QA/CP/009					
								REV NO: 01		DATE: 03.09.22			
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL, RC PURAM, HYD-502032			PRODUCT: INSTRUMENT HOOK UP PACKAGE			PAGE 6 OF 6					
SL NO	COMPONENT S	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	*D	AGENCY P W V			REMARK S

**Abbreviations:-**

MTC – Material Test certificate	AS – Alloy Steel
IBR – Indian Boiler Regulations	SS – Stainless Steel
DFT – Dry Film Thickness	TC – Test Certificate
PMI – Positive Material Identification	IR – Inspection report

**Revision History:-**

Rev No.	Date	Revision Status
00	16-12-16	Initial Issue
01	03.09.22	Revise for quantum of check clarity by vendor and TPIA,

LEGEND: P: PERFORM, W: WITNESS, V: VERIFICATION. 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	REVIEWEED BY	APPROVED BY
	BHEL QA SIGN & STAMP	BHEL ENGINEERING SIGN & STAMP	BHEL HOS-QA SIGN & 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
<b>A. Item Description:</b>					
<b>B. Item Description:</b>					
<b>C. Item Description:</b>					
<b>D. Item Description:</b>					
<b>E. Item Description:</b>					

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