



BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

TIRUCHIRAPPALLI - 620 014

SUBCONTRACTING /ADVANCED TECHNOLOGY PRODUCTS

Telephone: 0431-2575289 & 2575751

Fax: 0431-2520565

E-mail: ashwinkumar@bhel.in

arumugaraja@bhel.in

ENQUIRY:

Enquiry Title: Fabrication of Steam Separators	ENQUIRY NUMBER:	622013E
	DATE:	11.11.2022
	DUE DATE:	03.12.2022

1. THIS IS ONLY A REQUEST FOR QUOTATION AND NOT AN ORDER
2. THE ABOVE REFERENCE IS TO BE QUOTED IN ALL CORRESPONDENCES

Kindly submit your quotation for “Fabrication of Steam Separators -” as per the Annexure G to this enquiry.

The Manager

(Subcontracting / ATP)

First floor, Building -2&4 ,

BHARAT HEAVY ELECTRICALS LIMITED

TIRUCHIRAPALLI - 620014

duly super-scribing the above Enquiry Number and Due date. The details are given in the Annexures (enclosed).

The offer subject to the acceptance of terms and condition enclosed should reach us before 14.00hrs. on the due date. The tender will be opened at 14.30hrs, on the due date in the presence of tenderers, who are all present.

Sl.No.	Description/Drawing No.	Qty.No.	Details of Material supply	Delivery	Scope of Work
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PLEASE REFER ATTACHED ANNEXURES OF ENQUIRY FOR FURTHER DETAILS

The following points may be noted before submitting the Tenders.

1. Quotations received after the prescribed time for tender opening on the due date will not be considered
2. It is mandatory to fill the enclosed form for confirmation of terms & conditions (Annexure C1) for this enquiry
3. The quotation prices should be furnished both in figures & words (Indian Rupees). In case of discrepancy in value between figures and words, the quoted rates in words will only be considered.
4. Enquiry front page (419-401/B), Scope of operations (Annexure-A), General scope of work (Annexure-1), Sample PQT (Annexure-2), Performance qualification (Annexure-3), Sample TDC for ER347 GTAW filler wire (Annexure-4), PR.chem:07-21/02, RT film submission format , Points for processing attestation material (Annexure-B), Terms and conditions of enquiry (Annexure-C), confirmation of commercial terms & conditions (Annexure-C1), General conditions for submission of offer (Annexure-G), Prequalification criteria (Annexure-P), Annexure -N (for new vendors only) and Section-V – Third party Non- Disclosure Agreement have to be accepted and a signed copy of all the pages of the above mentioned documents has to be submitted along with technical and commercial bid.
5. Any deviations from the specifications, terms and conditions of the enquiry, are to be furnished separately as “Schedule of Deviation”. In the absence of Schedule of Deviation document, BHEL will presume that all terms and conditions of this tender are accepted by the vendor.
6. All price quotations should be followed by the below mentioned quote and duly signed under.
“We are accepting all the terms and conditions of this BHEL tender”

In the absence of the above statement, BHEL will presume that all terms and conditions of this tender are accepted by the vendor.

For BHARAT HEAVY ELECTRICALS LIMITED

MANAGER/ SC & MP/ ATP

ASHWIN KUMAR MAROLI

Manager - MP & SC

Advanced Technology Products

BHEL, TRICHY - 620 014.



419 - 408/B
Effective date:
30.10.2017

BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPPALLI - 620 014
SUB CONTRACTING / ADVANCED TECHNOLOGY PRODUCTS
ANNEXURE- A TO ENQUIRY No: 622013E / Dt 11.11.2022

Fabrication of Steam Separators

COMPONENT DETAILS: Table :1

Sl. no.	Description	Drg rev	Work order & Du -part no.	Total qty (Nos)
01	Primary Steam Separator	0-93-171-05216/01 & 0-93-171-05217/00	D157-001-1-93-171-001-0000	30
02	Primary Steam Separator		D158-001-1-93-171-001-0000	30
03	Primary Steam Separator		D159-001-1-93-171-001-0000	30
04	Primary Steam Separator		D160-001-1-93-171-001-0000	30

Raw material supply Details Table :2

The following list of materials is for one Work order

Sl. No.	Part No.	Size dia / Thk x Length x Width	Description	Material specn.	Qty	Unit
01-04	0101	2 x 1250 x 5000 mm	Sheet 2mm	DIN 17440-1.4550	5	No.
	0102	3 x 1250 x 6000 mm	Sheet 3mm	DIN 17440-1.4550	8	No.
	0102	3 x 1000 x 4000 mm	Sheet 3mm	DIN 17440-1.4550	25	No.
	0103	4 x 1250 x 5000 mm	Sheet 4mm	DIN 17440-1.4550	6	No.
	0104	Dia 21.3 x 2.9 - L 5500mm	Tube Dia 21.3 x 2.9 t	SA213 TP347H	4	No.
	0105	Dia 20 - L 2400mm	Rod Dia 20 mm	DIN 17440-1.4571	19	No.
	0106	25 x 1400 x 2500 mm	Plate 25 mm	16Mo3	1	No.

SCOPE OF WORK AND DELIVERY CONDITIONS

1. Collection of raw materials from BHEL Trichy -
2. Refer Annexure 1 attached for all technical terms and conditions.
3. Only after successful completion of trial/mock up job, Procedure Qualification, fabrication of actual job shall be taken up.
4. Delivery of completed assembly at BHEL stores with full set of completed documents.

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RAW MATERIAL SUPPLY DETAIL:

Raw material shall be issued in 4 to 6 lots.

Material supply by Dec'22 (tentatively).

DELIVERY SCHEDULE:

Number of Lots – 4 (each Lot – 30 Nos: D157 -30 Nos, D158-30Nos, D159-30Nos, & D160-30Nos).

Delivery schedule: **8 months from the date of material issue & all documents approval.**

General Notes: -

1. Offer shall be given in rate per piece in attached **“Format R”** only. Suppliers shall quote for all items. L1 rate will be evaluated for full package.
2. Vendors shall establish all the manufacturing processes involved in the fabrication of Steam Separators to their satisfaction by taking sufficient trials with their own material before taking up job with BHEL material. **BHEL material shall not be used for trial purpose.**
3. A total of 4 Work orders of Steam Separators (30 Nos /W.O) are planned to be processed through this enquiry.
4. On receipt of two or more offers, the finalized L1 rates will be counter offered to second best ranked vendor in order to meet BHEL project delivery requirements. If the second best ranked vendor accepts to process the items with L1 rates, Work order split-up ratio will be 3:1 (Refer table below).

Work Order	Work Order	L1	Second best ranked vendor
1 st Work Order	D157	30	
2 nd Work Order	D158		30
3 rd Work Order	D159	30	
4 th work Order	D160	30	
Total Qty		90	30

5. However, Purchase Order will be placed initially for one work order for L1 vendor and one work order for second best ranked vendor. After successful completion of first work order quantity and delivery to BHEL, Purchase Orders for balance 2 work order quantity as listed in table above will be issued to L1 vendor. In case of non-performance by a vendor, BHEL reserves the right to cancel the Purchase Order and to divert the order.
6. In case, the number of offers received is less than 2, all four work orders will be placed on L1 supplier.
7. BG to be submitted by a vendor for one Work Order of this enquiry is Rs 15,00,000 (Ref: Cl 12.2 of Annexure C). This BG can be used for other Work orders (if applicable) of this enquiry no 622013E. Hence after manufacturing completion and delivery of one Work Order items (30 Nos) only, the raw materials for next Work order can be collected by the vendor (if applicable).

8. All materials shall bear identification details with QC/BHEL (or) QS/ NPCIL stamp/signature during all stages of manufacture.
9. Proper account of all free issue materials shall be maintained and extract of each account shall be sent to BHEL after completion of a Purchase Order.
10. Cutting plans for all issued materials shall be prepared and submitted by the subcontractor for approval from BHEL. Marking, attestation transfer and cutting of plates/ tubes/ rods shall be done only after approval of cutting plan by BHEL. **No additional joints are allowed other than shown in drawings.**
11. All materials shall have identification details (W.O No, DU Part No, Attestation No, SI No of separator) during manufacturing till dispatch.
12. During all stages of manufacture avoid carbon steel contamination of supplied SS material.
13. **Foreign material entrapment can cause serious damage to our Main assembly at BHEL. Hence all suitable preventive actions shall be taken by the supplier during manufacturing of Steam Separator components to prevent foreign material entrapment in Steam Separators.**
14. Deposition of finished components at Stores/ Production Shop ATP BHEL in proper condition to avoid any damages.
15. Handover all the stage inspection and final inspection reports, dimensional reports, RT films, NDE reports, Lab test reports, OPS, sketches etc to S/C-ATP/BHEL.
16. Return the balance material with proper identification details to stores/ BHEL- trichy.

Refer:

Annexure-1: General scope, Delivery conditions.

Annexure-2: Sample PQT

Annexure-3: Performance Qualification

Annexure-4: Sample Technical Delivery conditions (TDC)

PR: CHEM: Procedure for cleaning, Pickling /Descaling and passivation

07-21/02 of Stainless Steel (Austenitic) components



Subcontracting / ATP

S. ARUMUGA RAJA
Dy. Manager
Subcontracting / ATP
BHEL, Trichy - 620 014.



Advanced Technology Products

Operation Planning & Control

1. GENERAL SCOPE OF WORK AND DELIVERY CONDITIONS

- 1.1 Collection of raw materials from BHEL along with NPCIL attestation card and verification of attestation details in each unit of raw material.
- 1.2 Raw material shall be issued in 4 to 6 lots.
- 1.3 Raw material sizes and quantity specified in the indent are tentative. Final size and quantity may vary slightly.
- 1.4 Visual inspection on all free issue materials shall be carried out as soon as it is received at S/c works. Proper account of all raw materials shall be maintained and extract of each account shall be sent after completion of the contract.
- 1.5 All raw materials, components shall be properly stored.
- 1.6 Complete cutting layout for Job including samples for straining / mock-up solution annealing, performance and procedure qualifications (as required) shall be prepared and submitted by the subcontractor for approval from BHEL. Marking, attestation transfer and cutting of plates/ tubes/ rods shall be done only after approval of cutting layout by BHEL.
- 1.7 No additional joints over and above those in the drawing are permissible.
- 1.8 After manufacture, the separators are to be neatly packed in wooden crates arresting movement in units of one, so as to avoid any damage during transit & storage.
- 1.9 All balance raw materials shall be returned to BHEL with proper identification and BHEL, NPCIL stamp. Delivery of completed assembly at BHEL stores with full set of completed documents.

2. PROCEDURE QUALFN. & WELDER PERFORMANCE QUALIFICATION

- 2.1 Actual fabrication of job shall be taken only after successful completion of performance and procedure qualification.
- 2.2 PROCEDURE QUALIFICATION – Procedure qualification needs to be carried out for as per ASME section IX and ASME Section III NB as follows
 - SS+16Mo3 joint with ER309:LMo consumable.
 - SS+SS joint with ER347 consumable.

Raw material for this PQT will be supplied by BHEL and consumables will be arranged by vendor. Reference details for PQT attached as Annexure 2.

- 2.3 WELDER QUALIFICATION – Vendor to carry out welder performance qualification as per requirements of ASME Sec-IX and ASME Sec III NB. Two Welder performance qualifications (for two consumables above) have to carried out for manufacturing of Steam Separators. Welder qualification will have to be carried out for all the welders

C. Kaurhik

Annexure 1

engaged in the job through approved operation process sheet and witnessed by BHEL and NPCIL quality. Raw Material and consumables required for welder qualification shall be arranged by the vendor. Reference details for PQT attached as Annexure 3.

3. WELDING CONSUMABLES

- 3.1 ER347 – This electrode shall be used for all joints involved in manufacturing of Steam Separators except SS+16Mo3 joint
- 3.2 ER309:LMo – This electrode shall be used for SS+16Mo3 joint
- 3.3 Both the above electrodes shall be procured by the vendor. Procurement of the consumables shall be done as below
 1. Preparation of the Technical Delivery Conditions (TDC) document based on ASME Sec III NB and ASME Sec II Part C after obtaining approval from BHEL & NPCIL. The TDC for procurement of welding consumable shall be prepared by supplier and sent to BHEL for approval. Reference details for TDC attached as Annexure 4.
 2. Procurement based on approved TDC and approved Quality Assurance Plan (QAP).
- 3.4 Batch qualification / Consumable qualification has to be carried out by supplier for each lot of consumables as per ASME section II Part C SFA 5.9 and ASME Section III NB 2400. Lot classification has to be maintained as S2 and level of testing as Schedule-K as per ASME Sec II Part C SFA 5.01.
- 3.5 Raw material for welding consumable batch qualification & PQT will be supplied by BHEL
- 3.6 Welding consumable shall be procured from any ISO 9001:2015 certified manufacturer

4. TRIAL JOB / MOCKUP REQUIREMENT

- 4.1 Vendor shall manufacture a trial / mockup job of Steam Separator completely as per drawing.
- 4.2 Material for the trial job shall be arranged by vendor.
- 4.3 All tooling, gauges required for manufacturing the job shall be done by the vendor.
- 4.4 Only after demonstration of completed trial job to BHEL, actual job fabrication shall be started by the vendor.

5. DOCUMENTATION & QUALITY REQUIREMENTS

- 5.1 The following documents has to be submitted by the vendor and approved by BHEL & NPCIL before start of actual job.
 - a. Operation Process Sheet (OPS) / manufacturing plan
 - b. Cutting Plan for all the materials
 - c. Procedure for PT, RT & Solution Annealing and surface treatment.
 - d. Welding Procedure Plans for every joint
 - e. Material Sampling and Testing Plan for tests to be done at NABL labs
 - f. Heat Treatment plan

Annexure 1

5.2 The vendor should have covered area for storage of the jobs.

5.3 NDE requirements

- Only NPCIL approved procedure & chemicals shall be used for PT. List will be given later
- Refer Note 1,2,3,15,16 of drawing 0-93-171-05216 for NDE requirements.
- NDE qualified persons shall be available to clear PT & RT stages.

5.4 Stage wise inspection to be carried out by BHEL and NPCIL quality as per the inspection stages specified in OPS.

5.5 All quality requirements specified in drawing 0-93-171-05216 and 05217 shall be followed.

5.6 Solution Annealing

Solution annealing at 925°C for 60 minutes shall be carried out for components where cold working exceeds 10% (i.e. item no. 1,2,4,5,15,17,25) as per Note 9 & 17 of drawing 0-93-170-05216.

Mock up for Solution Annealing

A mock up solution annealing for the strained samples shall be conducted for the first W.O. alone on a test coupon of size approx. 30 x 380 mm (for both 2mm & 3mm thick) with maximum strain from the material supplied for the job and following tests to be done. These tests shall be done in an NABL approved Lab by the vendor.

- IGCT – 1 test on each thickness
- Tensile – 1 test on each thickness
- Micro – 1 test on each thickness

5.7 After solution annealing of components, Pickling/Descaling to be done to remove oxides/scales as per BHEL procedure PR:CHEM:07-21/Rev 02.

5.8 Degreasing & Passivation shall be done on the entire assembly just before flange welding stage as per BHEL procedure PR:CHEM:07-21/Rev 02.

5.9 Compilation of RT films – All RT films shall be properly identified, packed and submitted to BHEL. The format for compilation which is attached shall be referred for details.

6. SUGGESTIVE MANUFACTURING PLAN

Note- The following manufacturing plan **is only suggestive**. Vendor to prepare a detailed manufacturing plan (OPS) including all the drawing requirements. Final approval of the manufacturing plan and stages of inspection will be done by NPCIL.

M1 – Inspection by Manufacturer

B1 – Inspection by BHEL (Inspection – Hold Point)

B2 – Inspection by BHEL (Inspection – Review / Non mandatory)

A1 – Inspection by NPCIL (Inspection – Hold Point)

A2 – Inspection by NPCIL (Inspection – Review / Non mandatory)

Item 01 – Base Cup

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Cold Forming (M1)
- Degreasing (M1)
- Solution Annealing (M1/B1/A1)
- Surface Treatment (M1/B1/A2)

Annexure 1

- Check minimum thickness (M1)
- Edge Preparation (M1)
- Dimension Check (M1/B1)
- PT (including bend surface) (M1/B2)

Item 02 – Drip Pan

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Cold Forming (M1)
- Degreasing (M1)
- Solution Annealing (M1/B1/A1)
- Surface Treatment (M1/B1/A2)
- Check minimum thickness (M1)
- Edge Preparation (M1)
- Holes Drilling (M1)
- Dimension Check (M1/B1)
- PT (including bend surface) (M1/B2)

Item 03 – Tube

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Profile Cutting (M1)
- Dimension Check (M1/B2)

Item 04 – Support Rod 1

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Cold Forming (M1)
- Degreasing (M1)
- Solution Annealing (M1/B1/A1)
- Surface Treatment (M1/B1/A2)
- Edge Preparation
- Dimension Check (M1/B1)
- PT (including bend surface) (M1/B2)

Item 05 – Bend 1

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Cold Forming (M1)
- Degreasing (M1)
- Solution Annealing (M1/B1/A1)
- Surface Treatment (M1/B1/A2)
- Check minimum thickness (M1)



Annexure 1

- Correction (if any) (M1)
- Edge Preparation (M1)
- Dimension Check (M1/B1)
- PT (including bend surface) (M1/B2)

Item 06 – Shell

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Rolling & Edge Preparation (M1)
- PT (on EP surface) (M1)
- Long Seam Fit up (M1/B2)
- Root pass welding & PT (M1)
- Full welding (M1/B2)
- Dimension Check (M1/B1)
- PT (M1/B2)
- RT (M1/B2/A2)

Item 07 – Swirl Vane 1

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Cold Forming (M1)
- Dimension Check (M1/B2)

Item 08 – Shell 1

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Rolling & Edge Preparation (M1)
- PT (on EP surface) (M1)
- Long Seam Fit up (M1/B2)
- Root pass welding & PT (M1)
- Full welding (M1/B2)
- Dimension Check (M1/B1)
- PT (M1/B2)
- RT (M1/B2/A2)

Item 09 – Shell

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Rolling & Edge Preparation (M1)
- PT (on EP surface) (M1)
- Long Seam Fit up (M1/B2)
- Root pass welding & PT (M1)
- Full welding (M1/B2)

P. Samik

Annexure 1

- Dimension Check (M1/B1)
- PT (M1/B2)
- RT (M1/B2/A2)
- Drilling of holes Dia12 (to suit item 28 &10) (M1/B2) – *to be done by vendor at suitable stage*

Item 10 – Shell

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Rolling & Edge Preparation (M1)
- PT (on EP surface) (M1)
- Long Seam Fit up (M1/B2)
- Root pass welding & PT (M1)
- Full welding (M1/B2)
- Dimension Check (M1/B1)
- PT (M1/B2)
- RT (M1/B2/A2)

Item 11 – Shell

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Rolling & Edge Preparation (M1)
- PT (on EP surface) (M1)
- Long Seam Fit up (M1/B2)
- Root pass welding & PT (M1)
- Full welding (M1/B2)
- Dimension Check (M1/B1)
- PT (M1/B2)
- RT (M1/B2/A2)

Item 12 – Cone 1

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Cone Forming & Edge Preparation (M1)
- PT (on EP surface) (M1)
- Segment Long Seam Fit up (M1/B2)
- Root pass welding & PT (M1)
- Full welding (M1/B2)
- Dimension Check (M1/B1)
- PT (M1/B2)
- RT (M1/B2/A2)

Exam

Annexure 1

Item 13 – Shell 2

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Rolling & Edge Preparation (M1)
- PT (on EP surface) (M1)
- Long Seam Fit up (M1/B2)
- Root pass welding & PT (M1)
- Full welding (M1/B2)
- Dimension Check (M1/B1)
- PT (M1/B2)
- RT (M1/B2/A2)

Item 14 – End Plate

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Machine Outer Dia (M1)
- Notch cutting 9 slots (M1)
- Edge Preparation (M1)
- Dimension Check (M1/B1)

Item 15 – Flow Guide Vane

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Cold Forming (M1)
- Degreasing (M1)
- Solution Annealing (M1/B1/A1)
- Surface Treatment (M1/B1/A2)
- Check minimum thickness (M1)
- PT (M1)
- Corner Fit up (M1)
- Welding (M1/B2)
- PT (M1/B2)
- Edge Preparation (M1)
- Dimension Check (M1/B1)

Item 16 – Segment Stud

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Dimension Check (M1/B2)

C. Santhi

Annexure 1

Item 17 – End Cover

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Cold Forming (M1)
- Degreasing (M1)
- Solution Annealing (M1/B1/A1)
- Surface Treatment (M1/B1/A2)
- Check minimum thickness (M1)
- Edge Preparation (M1/B2)
- PT (M1/B2)
- Dimension Check (M1/B1)

Item 18 – Shell 3

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Rolling & Edge Preparation (M1)
- PT (on EP surface) (M1)
- Long Seam Fit up (M1/B2)
- Root pass welding & PT (M1)
- Full welding (M1/B2)
- Dimension Check (M1/B1)
- PT (M1/B2)
- RT (M1/B2/A2)
- Notch cut to suit part 17 (M1)
- Dimension Check (notch) (M1)

Item 19 – Cone

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Cone Forming & Edge Preparation (M1)
- PT (on EP surface) (M1)
- Segment Long Seam Fit up (M1/B2)
- Root pass welding & PT (M1)
- Full welding (M1/B2)
- Dimension Check (M1/B1)
- PT (M1/B2)
- RT (M1/B2/A2)

Item 20 – Cone 2

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Cone Forming & Edge Preparation (M1)
- PT (on EP surface) (M1)

E. Samir

Annexure 1

- Segment Long Seam Fit up (M1/B2)
- Root pass welding & PT (M1)
- Full welding (M1/B2)
- Dimension Check (M1/B1)
- PT (M1/B2)
- RT (M1/B2/A2)

Item 21 – Shell

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Rolling & Edge Preparation (M1)
- PT (on EP surface) (M1)
- Long Seam Fit up (M1/B2)
- Root pass welding & PT (M1)
- Full welding (M1/B2)
- Dimension Check (M1/B1)
- PT (M1/B2)
- RT (M1/B2/A2)

Item 22 – Shell

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Rolling & Edge Preparation (M1)
- PT (on EP surface) (M1)
- Long Seam Fit up (M1/B2)
- Root pass welding & PT (M1)
- Full welding (M1/B2)
- Dimension Check (M1/B1)
- PT (M1/B2)
- RT (M1/B2/A2)

Item 23 – Swirl Vane 2

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Cold Forming (M1)
- Corner Rounding (M1)
- Dimension Check (M1/B2)

Item 24 – Shell

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Rolling & Edge Preparation (M1)
- PT (on EP surface) (M1)

Annexure 1

- Long Seam Fit up (M1/B2)
- Root pass welding & PT (M1)
- Full welding (M1/B2)
- Dimension Check (M1/B1)
- PT (M1/B2)
- RT (M1/B2/A2)

Item 25 – Bend 2

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Cold Forming (M1)
- Degreasing (M1)
- Solution Annealing (M1/B1/A1)
- Surface Treatment (M1/B1/A2)
- Check minimum thickness (M1)
- Correction (if any), EP (M1)
- Drilling Dia 2 holes (2 no.) (M1/B2)
- PT (including bend surface) (M1)

Item 26 – Flange Ring

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Machining to size (M1)
- Holes Drilling (M1)
- Dimension Check (M1/B1)

Item 27 – Support Rod

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Dimension Check (M1/B2)

Item 28 – Spacer Rod

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Edge machining (M1)
- Dimension Check (M1/B2)

Item 29 – Guide Vane

- Verification of Attestation (M1/B1/A1)
- Marking & cutting to size (M1)
- Cold Forming (M1)
- Edge Preparation (M1/B2)

C. Sathish

Annexure 1

- Dimension Check (M1/B2)

Sub Assembly 1

- Fit up & welding - Item 22 + 23 (M1/B1)
- OD 484 machining (M1/B2)
- Fit up & welding - Item 21 + 23 (M1/B2)
- Fit up & welding - Item 21 + 25 (M1/B2)
- Root Pass PT (M1)
- Final PT (M1/B2)
- RT (M1/B2/A2)
- Fit up & welding - Item 25 + 24 (M1/B2)
- Root Pass PT (M1)
- Final PT (M1/B2)
- Fit up & welding - Item 22 + 20 (M1/B2)
- Root Pass PT (M1)
- Final PT (M1/B2)
- Item 20 size correction (M1)
- Inspection DT (M1/B1)

Sub Assembly 2

- Fit up & welding - Item 10 + 19 (M1/B1)
- Root Weld (M1)
- Final PT (M1/B2)
- RT (M1/B2/A2)
- Fit up & welding - Item 10 + 28 (M1/B2)
- PT (M1/B2)
- Size correction (M1)
- Inspection DT (M1/B1)

Sub Assembly 3

- Fit up & Assembly - Item 16 + 29 (M1/B2)
- PT (M1/B2)
- Size correction (M1)
- Inspection DT (M1/B2)

Sub Assembly 4

- Fit up & welding - Items 14,15,17,SA3 (M1/B2)
- Welding (M1/B2)
- PT (M1/B2)
- Inspection DT (M1/B2)

P. Faruk

Annexure 1

Sub Assembly 5

- Fit up - Item 11,12,13 (M1/B1)
- Welding (M1)
- Root PT (M1)
- Final PT (M1/B2)
- RT (M1/B2/A2)
- Size correction (M1)
- Inspection DT (M1/B1)

Sub Assembly 6

- Fit up & welding - Item 7 + 8 (M1/B1)
- OD 484 machining (M1/B2)
- Fit up & welding - Item 7 + 6 (M1/B2)
- Fit up & welding - Item 6 + 5 (M1/B2)
- Root PT (M1)
- Final PT (M1/B2)
- Length correction (M1)
- Inspection DT (M1/B1)

Sub Assembly 7

- Fit up & welding - Item 5 + 9 (M1/B2)
- Root & Final PT (M1)
- RT (M1/B2/A2)
- Holes marking & Drilling in Item 09 (M1)
- Fit up & welding - Item 5 + SA6 (M1/B2)
- PT (M1/B2)
- Length correction (M1)
- Inspection DT (M1/B1)

Sub Assembly 8

- Fit up & welding - Item 1 + 2 (M1/B2)
- Final PT (M1/B2)
- RT (M1/B2/A2)
- Inspection DT (M1/B1)

Sub Assembly 9

- Fit up & welding - Items 3,4,SA8 (M1/B2)
- Welding (M1/B2)
- Final PT (M1)
- Inspection DT (M1/B1)

E. Karmile

Sub Assembly 10

- Fit up & welding - Items 18,SA4,SA5 (M1)
- Concentricity check (M1/B1)
- Welding (M1/B2)
- Final PT (M1/B1)
- Inspection DT (M1/B1)

Sub Assembly 11

- Fit up of items 20+18, 27+25, +18 (SA1+SA10+item27) (M1/B1)
- Welding (M1)
- Final, Fillet PT (M1/B1)
- Fit up of items 21+19, +9, 9+28 (SA2+SA7+above) (M1/B1)
- Welding (M1/B2)
- Root PT (M1)
- Final, Fillet PT (M1/B1)
- Dimensions correction (M1)
- Inspection DT (M1/B1)

Sub Assembly 12

- Fit up of SA9 + SA11 (M1/B1)
- Welding (M1/B2)
- Final PT (M1/B2)
- Inspection DT (M1/B1/A2)
- Degreasing & Passivation (M1/B1/A2)

Sub Assembly 13

- Fit up of item26 + SA12 (M1/B1)
- Welding (M1/B2)
- PT (M1/B1)
- Machining (M1)
- Final DT (M1/B1/A1)
- Consolidation of NCRs (if any) (M1/B1/A2)
- Consolidation of RT films as per annexure (M1/B1/A2)
- Completion of Documentation (M1/B1/A2)
- Shipping Release (B1/A1)

C. Ramiah

SAMPLE PQT

Procedure Qualification shall be done as per ASME Section IX and ASME Section III NB. The following details are samples only.

Sample PQT-1 (SS+SS)

Raw material – 4mm SS sheet (tentatively 150x500mm – 2 no.)

- a. Fit up & welding
- b. PT on 1st pass welding
- c. PT on final pass welding
- d. RT
- e. Mechanical testing (at NABL approved Lab)
 - Tensile test (2 no.)
 - Root Bend (2 no.)
 - Face Bend (2 no.)

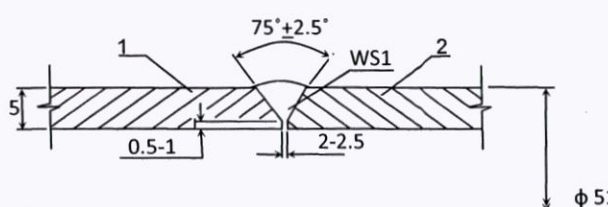
Sample PQT-2 (SS+16Mo3)

Raw material – 4mm SS sheet (tentatively 150x500mm – 1 no.) & 13mm 16Mo3 plate (tentatively 150x500mm – 1 no.)

- a. Fit up & welding
- b. PT on 1st pass welding
- c. PT on final pass welding
- d. RT
- e. Mechanical testing (at NABL approved Lab)
 - Tensile test (2 no.)
 - Root Bend (2 no.)
 - Face Bend (2 no.)

P. Samile

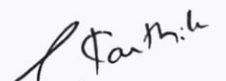
Annexure 3

SKETCH / WELDING SEQUENCE / BEAD SEQUENCE 										Specification ASME SEC IX, ASME SEC III			Drawing No.		Weld Loc. No.	
										Welder Performance Qual.Reqd. -----			PERFORMANCE QUALIFICATION BUTT JOINT			
										Production Weld Test Coupon No. -----						
										Accord to Plan No.			GTAW			
										Post Weld Heat Treatment AS PER OPS						
Examination AS PER OPS			Revision By		04	05	06	07								
Accord to Plan No.			Rev. Date													
Drying			Prepared By													
Electrode			Checked By													
Drying			Approved By													
SHIELDING GAS ARGON 99.99% PURE			Insp. Agency													
Flux			Approval													

Pos	Base - Metal / Trade - Name / ASME/DIN/ GOST - Designation	Remarks	Preparation of Welding Edges Machining / Grinding
01	SA 210 Gr. C	TUBE	
02	SA 210 Gr. C OR ANY P1 MATERIAL	TUBE	Treatment of Root Initial & Inter Pass Cleaning

Welding Sequence	Welding Process	Welding Position	Welding Materials										Welding Parameters					Nature of Rev.
			Trade Name / DIN/AWS/GOST Designation	Heat No.	F.No.	Dimension (mm)	Flux Mfrer.	Inner Shielding Gas-LPM	Current	A	Rate of Travel (mm)	Width of Oscill (mm)	Hot Wire Feed (m/min)	Preheat Temp.	Number of Passes			
	Procedure Qualn. No.		Manufacturer Chem. Analysis	Weld Metal Test No.	A.No.		Batch No.	Outer Shielding Gas-LPM	Polarity of Electrode	V	Length of Bead (mm)	Frequ- ency of Oscill (f / min)	Cold Wire Feed (m/min)	Interpass Temp.				
01	GTAW WPS:T-1-1-09	6G	ER 70S A1		6	φ2.4		2-3	DC	75-100				RT	As	Remarks		
								7-8	SP	12-16				300°C	Reqd.			

SAMPLE WELDER QUALIFICATION



SAMPLE Technical Delivery Conditions (TDC)

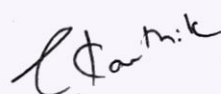
for

ER347 GTAW filler wire

Document Number and revision	
Document Date	
Prepared	
Reviewed	
Reviewed	
Approved	
Approved	

Revision status:

Revision 00: Initial issue.



1.0 Scope

- 1.1. This specification prescribes requirements for ER347 bare rod as per SFA 5.9 of ASME BPVC Section II Part C, for welding with GTAW Welding process.

2.0 General Requirement:

- 2.1. The GTAW consumable shall meet the requirements of latest edition of ASME Sec II - Part C, SFA 5.9-ER347 classification, SFA 5.01, SFA 5.02; and ASME Section III NB Div I. However, the Material Organization Certification of the supplier, as envisaged by NB 2600 of Section III NB is not mandatory. Additional, modified requirements if any, specified in this specification shall be adhered to.
- 2.2. The supplier shall submit the QMS Manual under the ambit of which the supply is intended to be made, along with the offer. The acceptance of such offers is subject to acceptance of supplier's QMS by BHEL, and BHEL's customer NPCIL.
- 2.3. BHEL will visit the supplier's manufacturing plant, testing centre for conducting a QA systems audit prior to ordering/ actual execution of work.
- 2.4. The entire quantity of consumable shall be from **single lot**. Vendor shall specify number of lots in offer. Lot classification shall be S2 for the consumable, as per ASME Sec III NB 2420.
- 2.5. The supplier shall provide along with the supply a Test Certificate (TC) containing the results of actual testing performed on the sample taken from the manufactured lot. All mandatory tests indicated in ASME Section II Part C, ASME Section III NB, and this specification shall be included.
- 2.6. The TC shall include quantity, lot number, NDE result, chemical and mechanical testing results, test temperatures, Lot Class S2 of the consumable, and Schedule of testing K. The TC shall be supported by a EN 10204-3.1 certification, that is – the supply shall be certified in accordance with EN 10204-3.1.
- 2.7. Post ordering, the supplier has to make detailed Quality Assurance Plan (QAP) and submit it to BHEL for getting approval from NPCIL. Only after QAP approval, the entire ordered quantity shall be manufactured by the supplier as per the stages mentioned in the suggestive QAP (SI no. 3,4&5). From the manufactured lot, a pilot quantity (selected by BHEL and NPCIL – through a physical visit) shall be sent to BHEL Trichy for Lot Qualification.
- 2.8. The Lot Qualification of the consumable testing as indicated in para 3.0 of this document at Supplier's works will be witnessed by BHEL inspectors as per the suggestive QAP (SI no.5).
- 2.9. The Lot Qualification of the consumable, involving tests indicated in para 3.0 of this document, will be carried out at BHEL Trichy. Based on the successful qualification meeting all requirements of this TDC, dispatch clearance for the bulk quantity of the consumable will be given. The supplier shall preserve the bulk quantity of the consumable Lot at his works in good condition till dispatch clearance.
- 2.10. If the supplier engages sub-contractor(s) for any portion of consumable manufacturing work, the same shall be informed to BHEL, and concurrence obtained.



3.0 Testing Requirements:

- 3.1. Chemical Analysis of Weld Metal shall conform to the requirements given for ER347 classification given in SFA 5.9 of ASME Section II Part C. In addition, the copper content of the weld metal shall not exceed 0.3%, and cobalt content of the weld metal shall not exceed 0.03%.
- 3.2. A test coupon shall be prepared using each lot of the ordered consumable, and tested, in accordance with NB 2400 of ASME Section III Part NB. The tests required under NB 2400 shall be carried out on this coupon including the ferrite content test as per NB-2433. Ferrite content of welds made using this electrode shall be controlled to be from 5FN to 10FN. Other acceptance criteria of the tests shall be as per NB 2400.

4.0 Packaging

- 4.1. Rods of the same size and batch lot shall be packed in water resistant plastic tube shaped cartons. Each tube carton shall weigh not more than 10 kg. The cartons shall be provided with watertight lid to ensure water proof during transit and storage. Tube cartons shall be packed in waterproof boxes with crates so as to ensure no damage during shipment and the package shall withstand storage under tropical conditions for at least a period of 4 years from the date of delivery. Weight of each crate shall not exceed 1000 kg. The cartons shall have product information as given below legibly marked so that it is visible outside the package.

- A) ASME specification & classification designation
- B) Brand Name
- C) Size
- D) Batch/Lot No.
- E) Net weight

Appropriate precautionary information given in ANSI Z49.1 latest edition (as a minimum) or its' equivalent shall be displayed in legible print on all the packages.

C. P. M. H.

Annexure I – Suggestive Quality Assurance Plan

S. No	Description	Type of Inspection	Reference Documents	Format of Record	Inspection	
					BHEL	NPCIL
1	QMS review	Documents	PO	QMS review report	Review of QMS Submission to NPCIL	Review
2	Systems Audit	Physical visit	PO	Audit report	Witness of Quality System	Review
3	Incoming Raw Material, Lot Classification & Manufacturing	Physical	PO	Report	Witness (Only document review for ASME QSC holder)	Review
4	Pilot Quantity Selection	Physical	PO	Selection from Bulk Quantity	Stamping by BHEL to Entire Bulk Quantity	Witness
5.	Lot Qualification at Vendor works	Physical	PO	Test Reports	Witness (Only document review for ASME QSC holder)	Review
6	Lot Qualification at Manufacturers works	Physical	Approved OPS	Test Reports	Perform and Witness	Witness
7	Verification of Final Documents	Physical	Documents Review	Test Reports and Manufacturing Documents	Perform	Approval

BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPELLI - 620 014**PLANT LABORATORY****PROCEDURE FOR CLEANING, PICKLING / DESCALING AND
PASSIVATION OF STAINLESS STEEL (AUSTENITIC) COMPONENTS FOR
NUCLEAR PROJECTS / NPC**

Prepared by	R. Mahalingam SSO / P.Lab	<i>[Signature]</i>	Document No: PR: CHEM: 07 - 21 Revision: 02 Date: 28.09.2001
Reviewed by	M. Somu DM / P.Lab	<i>[Signature]</i>	
Approved by	R. Veeraragavan DGM / P.Lab	<i>[Signature]</i>	

NUCLEAR POWER CORPORATION**APPROVED**Reviewed *[Signature]* 7/11/2001Checked *[Signature]* 7/11/2001

This Approval of
to be done does not relieve the user of
responsibility of accuracy of details.

Record of Revisions

Rev. No	Clause revised	Details
01	Clause 3.1 & 6.2	Editorial changes made.
02	Clause No: 3.1	This clause is redefined including machining by EDM wire cutting process.
	Clause No: 8.1	The test for the presence of copper using Copper sensitive Kit is added.

1.0 SCOPE:

1.1 The following procedure explains the method for surface cleaning, pickling / descaling and passivation of Stainless Steel (Austenitic) components.

2.0 CLEANING:

2.1 The component shall be thoroughly swabbed with a lint free cotton cloth soaked in acetone.

2.2 Cleaning shall be carried out till fresh portion of the white cloth does not pick up any soil from the surface of the component.

3.0 PICKLING / DESCALING:

3.1 The component / part of the component which have undergone machining operation or machining by EDM wire cutting process shall be waived from pickling / descaling operation in consultation with NPC - QS.

3.2 The components which have undergone heat treatment (solution annealing) / welding operations shall be pickled / descaled so as to remove the black / brown oxide, using the following acid mixture.

Nitric Acid	: 20% v/v
Hydrofluoric Acid	: 1 to 2 % v/v
Water	: remaining

3.3 The tank made of Stainless Steel material only shall be used for the preparation of the above acid bath.

3.4 The period of immersion shall be about one hour or till all the black / brown oxide on the component is removed.

3.5 The component shall be periodically scrubbed with SS wire brush to ease the removal of oxide layer.

3.6 The pickling / descaling shall also be carried at 50 -55°C.

3.7 Alternatively, the pickling / descaling operation shall be carried out by applying an inert paste prepared using the above pickling solution, where the size and shape of the component is a constraint for immersion process.

4.0 RINSING AFTER PICKLING / DESCALING OPERATION:

4.1 The component shall be thoroughly flushed with service water and cleaned well using lint free cotton cloth to get a bright metal surface.

4.2 After thorough rinsing, the rinsings do not show any free acidity when tested with Methyl Orange indicator. (The rinsings do not show red colour with the indicator)

5.0 RINSING WITH DM WATER:

5.1 After rinsing with service water, the component shall be rinsed with DM water (refer para 1.0)

5.2 At the end of rinsing operation with DM water, the risings do not show opalescence with 1% w/v Silver Nitrate solution.

6.0 PASSIVATION:

6.1 The passivation of the component shall be carried out in immersion process in a bath of Nitric acid.

6.2 The concentration of the bath shall be as follows:

Nitric Acid	: 20%v/v
Sodium Dichromate	: 5%w/v (For machined components only)
DM water	: remaining
Temperature	: Ambient temperature

6.3 Tank made of Stainless Steel material only shall be used for the preparation of this acid bath.

6.4 Period of immersion shall be 30minutes to one hour or till the passivity of the surface is obtained, which is revealed by passivity test using Passivity test kit.

6.5 Alternatively, passivation operation shall also be carried out by applying an inert paste having the above bath composition, where the size and the shape of the component is a constraint for immersion process.

7.0 RINSING AFTER PASSIVATION:

7.1 The component shall be thoroughly rinsed with DM water.

7.2 The rinsing operation shall be carried out till the rinsings do not show any free acidity when tested with Methyl Orange Indicator as indicated in Para 4.2

8.0 INSPECTION:

8.1 After passivation, passivity check for the presence of iron using Passivity Test kit, at random, shall be conducted on the surface. For components that have undergone machining EDM wire-cutting process shall be checked for presence of Copper and Iron using Copper sensitive kit and Passivity test kit.

8.2 If the passivation is found to be satisfactory, the component / areas where the test had been carried, shall be rinsed with DM water and dried using compressed air, free from oil, dust and moisture.

9.0 PRESERVATION:

9.1 The components shall be handled using clean cotton gloves.

9.2 The components shall be packed in polythene sheet to prevent shop floor contamination, till it is taken up for further operations.

10.0 SAFETY PRECAUTIONS:

10.1 All safety precautions shall be taken while handling acids.

10.2 Rubber gloves, aprons, respirator and safety glasses shall be used by the personnel who are performing / supervising the above said operations.

10.3 The entire operations shall be carried out in a ventilated area.

11.0 QUALITY OF DM WATER:

11.1 The quality of DM water to be used shall be as follows:

pH	: 6.5 - 7.5
Chloride, in ppm	: less than 1.0
Conductivity, microsiemens per cm	: less than 10.0

12.0 REFERENCE:

The above operations are in line with ASTM A 380

13.0 NOTE:

The exact method for pickling / descaling and passivation operation (either immersion or paste application) to be adopted for specific components shall be agreed upon between BHEL and NPC and the same shall be incorporated in the relevant OPS along with the procedure document number.



419 - 418
Effective date:
30.10.2017

BHARAT HEAVY ELECTRICALS LIMITED

TIRUCHIRAPPALLI - 620 014

SUB CONTRACTING / ADVANCED TECHNOLOGY PRODUCTS.

ANNEXURE: B – 622013E dated 11.11.2022

IMPORTANT POINTS TO BE NOTED WHILE PROCESSING THE ATTESTED MATERIAL.

- 01) Raw material should not be taken up for machining/processing without attestation card.
- 02) The details given in the Attestation card should tally with the details punched on the raw material along with Inspector's seal.
- 03) Before gas cutting/hacksaw cutting/machining, attestation particulars are to be transferred to individual pieces along with BHEL Inspector's seal.
- 04) BHEL Inspector alone is authorised to put his Seal on attested material.
- 05) The following details should be punched each component. If the components are too small, the details may be punched on a small Metal Tag and tied after consulting our Inspector.
 - (i) Attestation card numbers.
 - (ii) Material specification.
 - (iii) Melt number
 - (iv) BHEL's Inspector's Seal.
 - (v) Firm code number.
- 06) Before taking up the raw material for processing, clearance is to be obtained in writing from our Inspector.
- 07) If any attestation particulars are removed during machining the same is to be transferred immediately on the machined area along with our Inspector's Seal.
- 08) Before punching, if it is not a machined area, the same is to be thoroughly cleaned by grinding, Sand blasting or at least by wire brushing. At no circumstances, the attestation shall be made on mill or heat treatment scale.
- 09) Use only 3mm letter and number punch. The punching depth shall be uniform and legible.
- 10) The attestation details are to be clearly bordered with yellow paint. Bordering is to be done only after applying rust preventive oil.
- 11) Attestation card is to be sent to Stores along with despatch documents. If any part supply is made, a true copy of the attestation card duly signed by our Inspector is to be sent along with the despatch documents. In such case, the last consignment is to be despatched with original attestation card.
- 12) All useable and bits are to be returned to our stores should have the attestation details with BHEL Inspector's Seal.
- 13) Before despatch, Subcontractor should ensure that all the above points are followed without fail and ensure that the attestation details punched are correct.

Subcontracting / ATP



419 - 407/F
Effective date:
08.08.2022

BHARAT HEAVY ELECTRICALS LIMITED TIRUCHIRAPPALLI - 620 014

SUB CONTRACTING / ADVANCED TECHNOLOGY PRODUCTS

ANNEXURE C

TERMS AND CONDITIONS TO ENQUIRY/PO NO: 62 2013 E/ dt. 11.11.2022

"POINTS NOT APPLICABLE SHALL BE STRUCK OFF"

- 1.0 TENDER OPENING AND FINALIZATION
- 1.1 BHEL reserves the right to negotiate with the L1 supplier, if required.
- 1.2 The Tender documents shall be signed by the Authorized Signatory Only. Authorized signatory shall be the person holding "power of attorney on behalf of the firm/company/Bidder concerned and authorized/empowered, by MD or Board of Directors or owner of the firm, to act on behalf of the firm for quoting this Tender and all proceedings connected with, till finalization and execution of the Contract.
- 1.3 In case of Single Ownership / Proprietorship establishments, the Tender shall be signed by the Owner / Proprietor Only.
- 1.4 Late offers received after the specified time will be rejected. BHEL shall not be responsible for any postal delay.
- 1.5 The representative of the Bidder, who desires to witness the Tender opening, may have to produce the Authorization Letter. The representatives without Authorization Letter will not be allowed to participate in the tender opening.
- 1.6 Only one representative from each Bidder will be allowed to participate in the Tender opening with valid identity.
- 1.7 BHEL has the right to refloat or short-close the tender, if L1 price is not the lowest acceptable price, or for any other reasons. No claim or compensation shall be admitted by BHEL in such an event.
- 1.8 It will be the firm's responsibility to ensure that the tender documents, framework agreement, Drawings, Quality documents and related technical & commercial conditions are studied and understood fully before submitting the offer. Any technical clarifications required can be sought in person or by e-mail before offer submission.
- 1.9 BHEL will conclude that the offer has been submitted by the firm fully understanding all the requirements both explicit and implied and other conditions and accepting the same. After tender opening, the bidders are not allowed to change/alter any of the conditions either partly or fully.
- 1.10 On the due date of tender opening, only the technical bids will be opened. Technical bids will be evaluated by BHEL and clarifications required, if any, will be called for from the bidders on technical and commercial points. The price bids of techno-commercially suitable bidders will be opened on a later date with prior intimation to respective bidders.
- 1.11 Bidders participating in the tender should declare in their technical bid whether they have been black-listed / kept on hold / given Business holiday for a specified period by any Public Sector Undertaking or Government Departments. The reasons for such action with details and the current status of such hold shall be clearly furnished to BHEL. If no such details are mentioned in the offer, it will be construed that

the bidder is not under any such hold. However, at a later date if it comes to the notice of BHEL about any such hold under enforcement, BHEL reserves the right to reject the offer at any point of time and also under any stage of the finalization of the tender. Such bidders will not be permitted to participate in the further tender proceedings and will be communicated suitably.

2.0 QUOTATION BY SUPPLIERS:

- 2.1 Suppliers to quote the rates for items in the format "R" as rate per item which will include all the charges like manufacturing charges, inspection charges, delivery charges, material collection charges etc. Applicable Taxes (If any) shall be mentioned separately in the format "R".

3.0 ACCEPTANCE OF THE PURCHASE ORDER:

- 3.1 In the absence of any objection received from the supplier within 7 days after the receipt of our Purchase Order, it will be presumed that the Order is fully accepted by the supplier.

4.0 MANUFACTURING OF COMPONENTS: -

- 4.1 The items are to be strictly manufactured as per Scope, applicable drawings and approved OPS/ Quality Documents.
4.2 Attestation procedure is to be followed wherever required as per Annexure-B.
4.3 The supplier shall ensure the availability of all the documents such as relevant Purchase order, detailed scope, drawings, quality documents etc.

5.0 INSPECTION

- 5.1 Inspection of the finished components will be done by BHEL & Customer Inspection agencies (applicable as per OPS and scope of work) for which a register for dimensional report shall be maintained at your works and you have to provide all the required facilities Free of Cost. The Inspection results will be given in Online IR (INSPECTION REPORT) which would be raised by the Supplier.
5.2 The items requiring first-off clearance for bulk production shall be offered for Inspection immediately after the manufacturing completion of sample pieces. Only on getting the approval from our Inspector and authorised representative in writing, further work on bulk production is to be started.
5.3 In case of partial or full raw material supply by BHEL for rejection due to our raw materials defect, we will allow proportionate payment to the extent of work carried out. For rejections due to operator's fault we will recover the cost of the raw materials at our current book rates plus 20% thereof, or 40% thereof, if it is an imported material plus applicable taxes (GST). However, no cost shall be recovered when the rejection is less than 2% of the total PO quantity of that order.

6.0 PAINTING AND PACKING OF COMPONENTS

- 6.1 All the machined surfaces are to be applied with peelable plastic compound "SPRAYPEEL" make (applicable as per OPS and scope of work).
6.2 Supplier's code number allotted by us should be punched and encircled with white paint on the finished components.
6.3 Any deviation from the scope of machining shall be suitably painted as per IR, on the component at the appropriate place.
6.4 Wherever our work orders specified in the Purchase order, the details of Work Order Number, Du-Part Number, Quantity Numbers and weight in Kgs., apart from the IR. No., Should be painted in white paint on any prominent surface of the component or on a metal tag of size 100x175 mm for smaller items, initially applied with Red oxide primer to IS2074 and further applied with a coat of Varnish to avoid peeling off the paint.
6.5 All items, which are having threading at the ends, should be covered with tar impregnated gunny cloth strap with the wire.

- 6.6 The finished component should be packed suitably before effecting despatch so as to prevent distortion and damage to the fabricated items either in transit or in handling.

7.0 TERMS OF DELIVERY FOR FINISHED COMPONENTS

- 7.1 The finished goods should be deposited at our Stores at your cost. It is the supplier's responsibility to do all the co-ordination works with BHEL stores/concerned agencies for delivery of finished components.
- 7.2 The Delivery challan should be prepared for each Purchase order / Work order separately as per our Pro forma.
- 7.3 The consignment should accompany one copy of IR, meant for our stores and six copies of Delivery challan.
- 7.4 In general, delivery period shall be as mentioned in the annexure to enquiry and this period shall be from the P.O date / last material issue date, whichever is later.
- 7.5 BHEL will have general supervision and direction over the work, & has the right to guide/direct or stop the work if necessary, to ensure the proper execution of the contract.
- 7.6 BHEL reserves the right to suspend the work or part thereof at any time and no claim whatsoever on this account will be entertained. In case of any dispute, the fabricator may appeal to BHEL whose decision shall be final and binding.
- 7.7 In case of inordinate delay beyond the delivery period, BHEL reserves the right to cancel the Purchase order.
- 7.8 BHEL reserves the right to cancel the purchase orders at any time or/and reduce the order quantity during the period of execution of contract.

8.0 GUARANTEE CERTIFICATE:

- 8.1 Not applicable for FIM. (Applicable only for Contractor's material)

9.0 TAXES & DUTIES:

- 9.1 Rates for items shall be quoted as per the prescribed format "R" only.
All applicable taxes payable as extra to the quoted price should be specifically stated in offers along with GST registration number in the prescribed format "R". Our GSTN Code :- 33AAACB4146P2ZL
Registered Address with GSTN :- Bharat Heavy Electricals Limited HPBP and SSTP, Thiruverumbur, Trichy – 14. (For GST related queries, pls contact:- gst.try@bhel.in)
- 9.2 **Suppliers are required to ensure compliance of GST provisions and registration of their firm as per GST act 2017.** In case of any changes in taxes and duties as per government notification, the same shall be applicable from time to time.
- 9.3 Material cost, GST and applicable interest, as per the existing tax laws, for materials lying at their works for a period more than one year, whatsoever may be the reason for retention of the material, if any, shall be borne by the supplier.

10.0 PAYMENT

- 10.1 Payment for ~~100%~~ 90% will be made after X (Refer : Note A) days from the date of receipt of finished goods and acceptance of materials (when the materials are supplied whether partially or fully to BHEL) supported by:

a)	OPS and all related documents.
b)	Material accountable Statement for BHEL supplied material / FIM.
c)	In case of 90% +10% payment type, balance 10% last payment shall be made only on completion of the order after duly accounting for rejections, short supplies (if any) and return or raw materials.
d)	Invoice of three copies in original along with DC and IR , addressed to DGM/Finance and routed through Manager / subcontracting / ATP
e)	Payment of proportionate machining charges for the rejected pieces due to material defect will be made against your Invoices in duplicate supported by 2 copies of IR. & Delivery challan acknowledged by our stores.

Note A : "X" for MSE vendors, Medium scale vendors and Non MSME vendors are as below:
For Micro & Small Enterprises vendors - after **45** days from the date of receipt and acceptance of materials.
For Medium Enterprises vendors - after **60** days from the date of receipt and acceptance of materials.
For Non MSME vendors - after **90** days from the date of receipt and acceptance of materials

11.0 LIQUIDATED DAMAGES

Items are to be delivered within contractual delivery duration. Items delivered beyond contractual delivery duration from the last date of issue of raw material are liable for liquidated damages at the rate of 0.5 % of the pending Purchase Order Value per each delayed week or part thereof for a maximum of 10% of Total Purchase Order Value (PV).

If PO delivery needs to be extended for reason attributable to BHEL, firm may request BHEL in writing for delivery extension with justifications and supporting documents before furnishing invoice for PO items.

Reasons like power cut, labour issues, machine break down, etc. which are controllable by the firm shall not be accepted as reason for delivery extension purposes/delay.

12.0 SPECIAL CONDITIONS FOR SUPPLIES WITH BHEL MATERIAL

12.1 Issue of materials:

- a) The raw materials are to be collected from BHEL by Supplier at Supplier's cost. It is the supplier's responsibility to do all the co-ordination works with BHEL stores/concerned agencies for the collection of raw materials.
~~Or~~
~~The raw materials will be supplied at Supplier's works at BHEL's cost.~~
- b) Materials will be issued in a sequential manner, based on the delivery and assembly requirements. Hence material collection may be required as per the assembly requirements.

12.2 Bank Guarantee:

- a) You will have to execute a Bank guarantee for the value of Rs. **15,00,000/-** for satisfactory performance of the order and also for the safe custody of the raw materials. The guarantee shall be executed on a Non-judicial stamp paper of value Rs.100/-. All bank charges will be to the supplier's account.
- b) In case any bidder does not accept for submission of Bank guarantee, their offer is likely to be rejected.
- c) The FDR/BG return letter is to be submitted by the supplier only after 90 days from last GR date. Completed Format No 437-045 (latest revision) to be submitted along with a request letter for return of FDR /BG.

12.3 Delivery of rejected items:

- a) In case of partial or full raw materials supply by BHEL, for rejection that may take place during the course of operation due to defective raw materials, BHEL will allow proportionate payment to the extent of operation carried out. However, such materials shall be deposited at our stores at your cost along with 3 copies of PDO, one copy of IR and 4 copies of Delivery challan.
- b) The rejected items due to faulty workmanship in your materials are to be deposited at our Stores at your cost.

12.4 Accountability of Raw materials:

- a) Cutting Plan for the materials issued by BHEL is to be submitted by the supplier within five days from the date of issue of the materials and the same should be approved by BHEL before the commencement

of the work. Any surplus / additional/ balance raw material to be returned by the supplier as per the approved cutting plan and accounted by BHEL through PMAS/FMAS.

- b) Please note that the supplier is responsible for prompt material accounting. Inordinate delay in settling the material accounting will lead to delay in processing the bills and payment block may be effected by BHEL.
- c) All the materials of BHEL, Tiruchirappalli shall under no circumstance be sold / hypothecated to any bank or to any lending institution or to any party whomsoever. It should not also be shown as the supplier's assets in any of the statements of the supplier to any party.
- d) Inventory statement has to be submitted every year by Supplier for materials supplied by BHEL. If the contractor fails to produce or properly account the materials issued, BHEL Tiruchirappalli will have right to take further action as deemed fit including recovery of the value of materials along with the respective administrative charges and statutory levies from the running bills of the Supplier/ temporary suspension of load/ termination of contract/de-listing.
- e) Any act of Supplier resulting in dishonest, misappropriation or conversion of the materials issued for his own use shall constitute the offence of Criminal Breach of Trust under Indian Penal Code and/ or such other offences under any other provisions of law and Contractee shall have every right to proceed against the Contractor under Criminal Law in order to ensure proper punishment to such perpetrator (Supplier) for the said offence/s. In such cases, BHEL shall take all necessary steps to recover the material available with supplier.
- f) Balance of raw materials will be accounted on completion of the order. Balance materials will have to be returned by supplier to BHEL Stores.
- g) ~~Turnings and borings / wastages are to be returned to BHEL Stores.~~
or
Turnings and borings / wastages need not be returned to our Stores. You may give due Credit to the value of the same in your quotation and accordingly quote.
- h) The cutting plans as approved by us shall be kept at your premises (for a minimum period of 3 years from date of cutting plan approval) and to be made available when required by BHEL officials or their representatives.
- i) It should be ensured that the jobs shall be fabricated as per the approved cutting plans.

12.5 Returning of Documents:

- a) All the documents of BHEL including drawing made available to the fabricators should be kept in strict confidence and under no circumstance be made available to others or allow others to make use of them. Such documents shall be returned to us on demand after completion. This secrecy clause is binding on the employees of the fabricators also. Any contravention will be viewed seriously that may include cancelling the contract or legal action on the supplier.

12.6 Contacts:

- a) Details of contact person's name, designation, department with complete postal and e-mail address along with phone office/mobile/fax numbers to be mentioned.

12.7 Subletting :

The supplier shall not sublet or assign any portion of work without the prior permission of BHEL. If any portion of work requires the special process (like heat treatment, plating, welding and slotting), the supplier may sublet only with prior permission. In the event of the supplier subletting any portion of work without such permission, BHEL shall be entitled to cancel the order and execute the same elsewhere at risk and cost of the supplier and the supplier shall be liable for any loss or damage which BHEL may sustain in consequence of such event.

13.0 RISK PURCHASE:

- 13.1 After placement of order, in case the supplier fails to execute the order, the supplier shall be put on Hold within the unit for all the item(s)/ Material Category (ies)/ type of work(s). Also BHEL will get the job

done through other suppliers at the risk and cost of Rate Contract Supplier and the extra expenditure involved if any shall be recovered from the Rate Contract Supplier for any amount due to them.

14.0 PROVISION OF ADEQUATE SAFETY MEASURES:

- 14.1 The supplier shall maintain and ensure necessary safety measures with respect to plant, machinery and personnel at his works as required, during manufacture, visits of BHEL personnel and inspection of the job. If any equipment is found not complying with proper safety requirements/conditions, then BHEL may withhold visit/inspection or instruct stoppage of work till such time the desired safety requirements are met.

15.0 CARTEL FORMATION:

- 15.1 All the firms should desist from forming cartel, as the practice is prohibited under Section 3(3) (a) & (d) of the competition Act 2002.
- 15.2 The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s). This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process. In case, the Bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/guidelines.

16.0 BHEL FRAUD PREVENTION POLICY:

- 16.1 The Bidder along with its associate/collaborators/sub-contractors/sub-suppliers/consultants/service providers shall strictly adhere to BHEL Fraud prevention policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice.

17.0 DISPUTE RESOLUTION:

- 17.1 Any dispute arising out of or in connection with this Agreement shall be finally settled by binding arbitration in accordance with the Arbitration and Conciliation Act, 1996 as may be amended from time to time. Unit Head / BHEL, Trichy – 620 014 or his authorized representative shall be the Sole Arbitrator and his decision shall be final and binding on both the parties. The place of arbitration shall be Tiruchirappalli, and the language shall be English. The courts at Tiruchirappalli shall have exclusive jurisdiction on any dispute arising out of or in connection with this Agreement, if intervention of court is warranted, subject to the arbitration provided above.



(Signature)

Subcontracting / ATP

ASHWIN KUMAR MAROLI
Manager - MP & SC
Advanced Technology Products
BHEL, TRICHY - 620 014.

FORMAT- R

Enquiry No: 622013E/dated 11.11.2022

Due Date: 03.12.2022

Firm GST NO: _____

Sl No	Material Description as mentioned in Enquiry	Qty. (A)	Rate (in INR) / Unit (B) – excluding taxes		Rate (in INR)/ Item (AxB) -excluding taxes
			In Figure	In Words	In Figure
10	Primary Steam Separator	30			
20	Primary Steam Separator	30			
30	Primary Steam Separator	30			
40	Primary Steam Separator	30			
Total					XXXXX

All rates quoted above for each item shall be inclusive of cost of all the activities and consumables including processing, transportation, welding consumables, qualifications ,etc and shall be without any taxes.

Applicable rate of GST for the offer is as below:

Taxes extra at _____ % SGST (If applicable) Taxes extra at _____ % CGST (If applicable) Taxes extra at _____ % IGST (If applicable)

We are accepting all the terms and conditions of this BHEL Enquiry.

Sl.No. 10, 20,30& 40 are same item & size, the prices of all these items(rate/unit) to be quoted as same.

Authorised signatory with seal

Commercial Terms & Conditions
Annexure-C1 to Enquiry NO 622013E dated 11.11.2022

SL. NO.	DESCRIPTION	TERMS & CONDITIONS BY BHEL	VENDOR CONFIRMATION
01	VALIDITY	The quoted rates should be kept valid up to 12 Months from the date of opening of price bids.	
02	FREIGHTAGE FOR		
	i) RAW MATERIAL	To be collected by firm.	
	ii) FINISHED COMPONENT (Packing & Forwarding)	To be delivered by firm.	
03	TAXES & DUTIES	Refer points 9 of Annexure –C	
04	PAYMENT TERMS	Refer point 10 of annexure-C	
05	LIQUIDATED DAMAGES	Refer point 11 of annexure-C	
06	BANK GUARANTEE	You have to execute a bank guarantee for Rs 15,00,000 /- before material collection (Refer 12.2 of Annexure C)	
07	DELIVERY SCHEDULE	Refer Annexure- A	
08	RISK PURCHASE CLAUSE	Refer point 13 of Annexure-C	
09	MSME Category	MSE vendors can avail the intended benefits only if they submit UDYAM Registration Certificate. If applicable, UDYAM Registration Certificate copy to be submitted along with this offer.	
10	OTHER TERMS(IF ANY)	Packing to be done to ensure safe transportation of materials. Threads shall be suitably covered to prevent any damages.	
11	Vendor contact details	Vendor Name, address, phone, mobile, email website, & contact person details to be provided (Refer Annexure –G Table:1)	

Authorised signatory with seal



BHARAT HEAVY ELECTRICALS LIMITED

TIRUCHIRAPPALLI - 620 014

SUB CONTRACTING / ADVANCED TECHNOLOGY PRODUCTS

ANNEXURE-G

BHEL Enquiry No. 622013E dt 11.11.2022

GENERAL CONDITIONS FOR SUBMISSION OF OFFER

1. The tender will be operated on two part bid basis i.e.
 - I. Techno-Commercial Bid &
 - II. Price Bid
2. The offer is to be submitted in a single envelope containing two envelopes. i.e. Part - I (Techno Commercial Bid) and Part - II (Price Bid)
3. Part – I (Techno-Commercial Bid):
 - I. Duly Signed Tender Documents
 - II. Duly signed Annexures – 1,2,3 & 4, A, B, C, G, RT film submission format, PR: CHEM:07-21/02 & enquiry front page 419-401/B
 - III. Duly filled & signed Annexure – C1, & P (Confirmation of commercial terms & conditions & Prequalification criteria)
 - IV. Signed and filled Annexure – N (Applicable for New Vendors only. Supporting documents should be submitted along with this bid)
 - V. Section –V Third Party Non-Disclosure Agreement

This Part – I document should be sealed in a separate envelope by clearly marked “Part I – Techno - commercial bid” indicating Enquiry No., Due Date., address & reference of the bidder.

4. Part – II (Price Bid):
 - I. Duly filled and signed Quotation – Include all the costs and quote as Rate per piece basis (in Rs.) for each Sl.No. as in “Format R”

This price bid should be sealed in a separate envelope by clearly marked “Part II – Price bid” indicating Enquiry No., Due Date., Address & reference of the bidder.

5. It is requested to put the above two envelopes (Techno-Commercial Bid & Price Bid) inside a separate larger sealed envelope and this envelope shall be super scribed as “Techno-Commercial Bid and Price Bid” for Enquiry No. 622013E Dt.: 11.11.2022 Due Dt.: 03.12.2022
6. The offer should be addressed to:
Manager
Sub-contracting / ATP
2&4 Building (First Floor)
Bharat Heavy Electricals Limited
Tiruchirappalli - 620 014
7. Any clarifications related to the enquiry should be addressed to ashwinkumar@bhel.in and arumugaraja@bhel.in and Enquiry number should be mentioned in the subject. Any clarifications without the reference of tender number in the subject will not be entertained.
8. Any techno commercial clarifications/request for tender due date extensions with valid acceptable reasons to be addressed to BHEL prior to 48 hours of tender due date. BHEL reserves the rights to extend the due date as per their discretion.
9. Tenders should be free from CORRECTION AND ERASURES. Corrections if any must be attested by authorised signatory of supplier; all amounts shall be indicated both in words as well as in figures.
10. Vendor details to be filled as per Table:1

Sub-Contracting/ATP

S. ARUMUGA RAJA₁
Dy. Manager
Subcontracting / ATP
BHEL, Trichy - 620 014.

Table:1 Vendor contact Details

1.	Vendor Name	
2.	Address	
3.	Phone / Mobile	
4.	E mail	
5.	Website	
6.	Contact person details	

PRE-QUALIFICATION CRITERIA FOR 622013E dt 11.11.2022

Fabrication of Steam Separators

ANNEXURE – P (Applicable for all vendors)

PRE-QUALIFICATION CRITERIA (TECHNICAL REQUIREMENTS)			
SL.NO.	DESCRIPTION	BHEL REQUIREMENTS	VENDOR CONFIRMATION / DEVIATION
01	CAPABILITY OF FABRICATION OF SIMILAR COMPONENTS	<p>Only those vendors who have capability in doing these type of works shall quote. Proof of capability shall be submitted in document form: Any document mentioned below can be submitted</p> <ol style="list-style-type: none"> Recent similar Purchase order <p align="center">or</p> <ol style="list-style-type: none"> Proof of manufacturing components/ assemblies pertaining to nuclear applications for customers like NPCIL/BARC/ IGCAR etc. <p><u>Evidence for experience of welding of components/ assemblies related to nuclear applications is mandatory.</u></p> <p>BHEL reserves the right to verify the information provided by vendor. In case the information furnished by vendor is found to be false / incorrect, the offer shall be rejected.</p>	
02	FINANCIAL	<p>Supplier shall have executed at least one Purchase Order of Value Rs 50 Lakhs or more, during any of the preceding 5 consecutive years. i.e F.Y 2021-22, 2020-2021,2019-2020,2018-2019,2017-2018.</p> <p>Documents like PO copy, invoice, DC etc can be submitted</p>	
03	COMPLIANCE WITH THE PROCEDURE	The vendor should submit a detailed method of control, and other pertinent details that will ensure compliance with the requirements of this enquiry.	
04	EQUIPMENTS/ MACHINES TO BE USED	Details of Equipment/Machines proposed to be used with calibration certificates (if required), shall be submitted by the vendor.	
05	QMS REVIEW	<p>Suppliers shall submit Quality Management System (QMS) before enquiry due date by</p> <ol style="list-style-type: none"> Email to mail id mentioned in Annexure-G sl. No 7. <p>(or)Hard copy to ATP/SC section address as mentioned in Annexure-G sl. No 6.</p> <p>The acceptance of such offers is subject to acceptance of supplier's QMS by BHEL's customer NPCIL.</p>	
06	TRIALS	<p>BHEL materials shall not be used for trials. One full Steam Separator has to be manufactured by the supplier with supplier's own material. Material used shall be of Stainless Steel for all components except the bottom flange. Only after review and clearance from BHEL, manufacturing of Steam Separator using BHEL material can be initiated.</p> <p>Note: If suppliers have executed a similar Purchase Order or manufactured a full trial assembly already, proof of same can be submitted to BHEL for review. In such cases, after review M/s BHEL will decide regarding waiver of the trial assembly manufacturing requirement. Decision of M/s BHEL will be final in this regard.</p>	

NOTES: The Vendor shall attach annexures and provide detailed explanation wherever necessary. Only those vendors who are meeting the pre-qualification criteria shall be considered for further tender processes.


ATP SC


ATP OP&C

D.M.

D.M.

BHEL Enquiry No.622013E dated 11.11.2022**ANNEXURE - N (For NEW VENDORS only)**

SI No	Details	Document submission
1	Nature of ownership & relevant documents (Proprietorship-Professional Tax Regn & Municipal Regn; Partnership firm – Partnership Deed; Co-operative society – Society rules & bye laws ; Private/Limited Company – memorandum & Articles of Association)	
2	Product or Service range & facilities: • List down the product range & specification details. • List of Manufacturing facilities/equipment's (including material handling facility)	
3	Licence details of the factory	
4	• Permanent Account No • GST registration number • Udyam registration certificate (If applicable)	
5	If registered with any other BHEL unit • Letter of registration with BHEL unit (If applicable) • Proof of successfully executed or executing purchase orders	
6	Accreditation certificate for ISO 9001: 2015 / Quality System manual / ISO:14000 / OHSAS ISO 18000 (If available)	
7	Balance Sheet for the last three years along with the audit report	
8	EXPERIENCE IN SIMILAR TYPE OF WORK (All the new vendors should enclose a Purchase Order copy against their previous experience)	



Prepared
S. ARUMUGA RAJA
Dy. Manager
Subcontracting / ATP
BHEL, Trichy - 620 014.



Approved

ASHWIN KUMAR MAROLI
Manager - MP & SC
Advanced Technology Products
BHEL, TRICHY - 620 014.



BHARAT HEAVY ELECTRICALS LIMITED

TIRUCHIRAPALLI 620014

ATP/ Subcontracting

SECTION V - THIRD PARTY NON-DISCLOSURE AGREEMENT

I, _____, on behalf of the _____ (Name of Company), Vendor Code _____ acknowledge that the information received or generated, directly or indirectly, while working with BHEL, Trichy on contract is confidential and that the nature of the business of the BHEL, Trichy is such that the following conditions are reasonable, and therefore:

I warrant and agree as follows:

I, or any other personnel employed or engaged by our company, agree not to disclose, directly or indirectly, any information related to the BHEL, Trichy Without restricting the generality of the foregoing, it is agreed that we will not disclose such information consisting but not necessarily limited to:

- Technical information: Methods, drawings, processes, formulae, compositions, systems, techniques, inventions, computer programs/data/configuration and research projects.
- Business information: Customer lists, project schedules, pricing data, estimates, financial or marketing data,

On conclusion of contract, I, or any other personnel employed or engaged by our company shall return to BHEL, Trichy all documents and property of BHEL, Trichy, including: drawings, blueprints, reports, manuals, computer programs/data/configuration, and all other materials and all copies thereof relating in any way to BHEL, Trichy's business, or in any way obtained by me during the course of contract.

I further agree that I, or any others employed or engaged by our company shall not retain copies, notes or abstracts of the foregoing.

This obligation of confidence shall continue after the conclusion of the contract also.

I acknowledge that the aforesaid restrictions are necessary and fundamental to the business of the BHEL, Trichy and are reasonable given the nature of the business carried on by the BHEL, Trichy I agree that this agreement shall be governed by and construed in accordance with the laws of country.

I enter into this agreement totally voluntarily, with full knowledge of its meaning, and without duress.

Dated at _____, this _____ day of _____, 20____.
(Place) (Date) (Month) (Year)

Name:

Company:

Signature & Seal:

Sub Contrator Company Details														
RADIOGRAPHIC RETENTION & Submission DETAILS FOR PROJECT (Details XXXXXX)													Submission Date	
Sl. No.	BHEL's WORK ORDER	BHEL's OPS no.	SUB ASSY.	Joint No. Details with stages								RT TAKEN DATE/PERIOD (From - To)	Box No. (Deposit Box No.)	REMARKS (if any)
				Jt. No.	Film Size	After Welding	Segment Details & RT Report Number	R1 (if any & So on)	Segment Details & RT Report Number	PWHT(if any)	Segment Details & RT Report Number			
<div> <div>Prepared By</div> <div>Reviwed & Approved BY</div> <div>Received BY (BHEL)</div> <div>Verified By (BHEL)</div> </div>														