

TENDER ENQUIRY LETTER (NIT)

Ref. Enquiry No.: PE/PG/MMN/E-6951/2022 dated 13.04.2022

Bid Submission Due Date & Time:
23.04.2022 (by 14:00 hrs IST)

Part-1 Opening Date & Time:
23.04.2022 (by 17:00 hrs IST)

Dear Sir,

Subject: Tender Enquiry for “SIMPLEX STRAINER” as per Technical Specification No. PE-TS- 440-165-N005 Rev 00 for 4X270MW TSGENCO MANUGURU TPS- MOEF NORMS (FGD Package)

BHEL is pleased to invite offer for “**SIMPLEX STRAINER**” package of **4X270MW TSGENCO MANUGURU TPS- MOEF NORMS (FGD Package)** through E-procurement route. Please submit your best quotation/offer online via e-procurement portal (<https://eprocurebhel.co.in/nicgep/app>). Detailed Scope of work & Equipment details shall be as per Technical Specification no. **PE-TS- 439/440-165-N005 Rev 00** and other tender documents hosted on <https://www.bhel.com/tenders>, https://pem.bhel.com/Current_Tender.aspx & <https://eprocurebhel.co.in/nicgep/app> / enclosed herewith.

Your best quotation/offer shall be submitted in two parts (Techno-Commercial Bid and Price Bid) strictly as per Clause-2.0 of the “**Instructions to Bidders**” of GCC, Rev. 07 (<https://pem.bhel.com/gcc.aspx>) online via e-Procurement portal (<https://eprocurebhel.co.in/nicgep/app>) for the under mentioned equipment/system.

Item Description	Project	Technical Specification
SIMPLEX STRAINER	4X270MW TSGENCO MANUGURU TPS- MOEF NORMS (FGD Package)	PE-TS- 439/440-165-N005 Rev 00

All corrigenda, addenda, amendments, time extensions, clarifications etc., to the tender will be hosted on websites only (<https://www.bhel.com/tenders>, https://pem.bhel.com/Current_Tender.aspx & <https://eprocurebhel.co.in/nicgep/app>) under subject tender reference. Bidders are requested to visit the websites constantly to keep themselves updated. Bidders to obtain required Digital Signature Certificate for participating in the subject tender.

It shall be the responsibility of the bidder to ensure that the tender is submitted via e-procurement system (<https://eprocurebhel.co.in/nicgep/app>) on or before the due date and time.

Important Note to be considered by All Bidders:

The offers of the bidders who are on the banned list as also the offers of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL web site www.bhel.com. The list of banned firms is available on BHEL website at following URL: <https://www.bhel.com/list-banned-firms>

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ENQUIRY LETTER (NIT) TERMS AND CONDITIONS

Please refer to GCC Rev. 07 and Corrigenda 01 to GCC Rev 07 (available at <https://pem.bhel.com/gcc.aspx>), Bidders are requested to go through the same while submitting the offer.

1. Pre-Qualifying Requirements:

Bidders have to provide the required details as per TECHNICAL PQR in their Techno-Commercial offer and has to note that bids of only those bidders shall be evaluated who meet the Technical Pre-Qualifying requirements.

2. **Make in India:** For this procurement, preference to Make in India is not applicable.

3. This is a conditional tender enquiry. Part-II opening/RA participation of a bidder shall be subjected to the following:

- i) Approval of vendor by end customer i.e. (TSGENCO). Bidders to furnish credentials as per vendor approval format
- ii) Techno-Commercial evaluation by BHEL.
- iii) Qualification of Technical PQR

4. This item/package /system falls under the list of items defined in para 3 of ministry of finance guideline dtd. 20.09.16 (Procurement of items related to Public safety, Health, Critical Security operations & Equipments etc.) & hence criteria of prior experience/Turnover shall be same for all the bidders including start-up/MSME.

5. Bidders have to note that following forms the part of Tender Documents:

- General Conditions of Contract (GCC) Rev. 07 and Corrigenda 01 to GCC Rev 07.
- Technical Specification: PE-TS- 439/440-165-N005 Rev 00
- Technical PQR
- Priced & Unpriced format
- Special Conditions of Contract (SCC of project)
- NIT CONDITIONS & other Enclosures
- Vendor approval format

Bidders to note that offers shall be submitted strictly in accordance with the requirements of the above Tender Documents & all the above Tender Documents along with post-bid agreements/MoMs (during Techno-Commercial evaluation) shall automatically become the part of the Order/Contract after its finalisation.

6. DELIVERY TERMS:

Within Four (04) months from date of CAT-1 approval of Primary drawing/documents or BHEL manufacturing clearance whichever is later, subjected to drawing/document submission/re-submission schedule as stipulated, in case of any delay in submission/re-submission of Primary drawing/documents,

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then same shall be reduced from the given delivery period. Delay in BHEL's comments/ approval beyond 18 days shall also be considered for delay analysis.

Applicable drawing/ documents for subject package are: -

PE-V10-440-165-N001 - GA Drawing - Primary
PE-V10-440-165-N003 - Quality Plan - Primary
PE-V10-440-165-N005 - O&M Manual - Secondary

Submission timeline for Primary Documents: - R-0 within 21 days from PO & subsequent revisions incorporating all the BHEL comments within 10 days of comments received from BHEL. BHEL shall furnish comments / approval on each submission within 18 days from receipt.

Submission timeline for Secondary Document: - within 30 days of issuance of MDCC.

Notes:

- A. The end period specified is for completion of the deliveries. Deliveries to start progressively so as to meet the completion schedule.
 - B. The delivery conditions specified are for contractual LD purposes, however BHEL may ask for early deliveries without any compensation thereof.
 - C. Wherever schedule of drawings/documents submission / re-submission is stipulated in the Technical Specifications, same shall be superseded by delivery specified in NIT.
 - D. Vendor to start manufacturing activities only after obtaining specific manufacturing clearance from BHEL Purchase group.
 - E. In case BHEL manufacturing clearance date is later than the date of Cat-1 approval of Primary drawing/documents, then the contractual delivery period will be calculated by setting off the time gap between Cat-1 approval date of Primary drawing/documents and the manufacturing clearance date, from any delay by vendor in submission/re-submission of Primary drawing/documents.
7. **Freight & GST:** Bidder to mention freight%, applicable GST rate on (Total Ex. works + freight) & type of GST in the specified cells of price schedule on price form in e-procurement portal.
 8. Evaluation shall be done on Total Cost to BHEL basis (excluding GST) on lump sum basis.
 9. **Overall (%) quantity variation:** Overall (%) variation in contract values (due to changes in the scope) shall be limited to $\pm 5\%$.
 10. Bidder has to note, 'BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com) for this tender. RA shall be conducted among the techno-commercially qualified bidders. Price bids of all techno commercially qualified bidders shall be opened and same shall be considered for RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking'.

Vendors to note that above RA clause will supersede clause no 13 of "Instruction to Bidders" of GCC Rev 07. The Bidder has to quote the Single Price (i.e. Total Cost to BHEL excluding GST) in Reverse Auction (inclusive of loading (if any), Packing & Forwarding charges, all the routine & type tests as per tender scope, Freight as applicable). De-loading (if any) shall be done in line with NIT terms.

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Link for RA guidelines to be followed as: <https://www.bhel.com/guidelines-reverse-auction-2021>.

11. CIF is not applicable for this package.
12. In case of joint bidding, Bidders shall be required to furnish scope matrix which should be clearly defined between them along with the offer for the complete scope as per NIT.
13. Bidder participating in tender will necessarily have to buy class III DSCs issued by the certifying authorities in India. Basic procedure/checklist has been uploaded on www.bhel.com for participating in future tender enquiries through e procurement.
14. Standard pre-printed terms & conditions of the tenderers (other than BHEL format) shall not be valid and binding in any manner whatsoever.
15. Unsolicited fresh/ revised price bid shall not be entertained.
16. If bidder mentions Not Applicable / Not required / Not Quoted in BHEL price format, the same to be substantiated by the bidder. If such item is required to be supplied for system completion in future, same will be supplied free of cost.
17. Purchaser shall be under no obligation to accept the lowest or any other tender and shall be entitled to accept or reject any/all tender(s) in part or full without assigning any reason whatsoever.
18. Bid should be free from correction, overwriting, using corrective fluid etc. Any interlineation, cutting, erasure or overwriting shall be valid only if they are attested under full signature(s) of person(s) signing the bid else bid shall be liable for rejection.
19. If any bidder uploads price bid in the unpriced section (techno-commercial attachment page) of the tender in e-procurement, in that case bidder(s) shall only be responsible for such mistake and any consequences thereof. Hence all bidders are requested to be more careful at the time of uploading the Unpriced and Price Bid for Part-I and Part-II respectively to avoid mismatch.
20. Bidders to,
 - ensure compliance to Ministry of Power (MoP) Order No. 25-11/6/2018-PG dt. 02/07/2020 & Order No. 11/05/2018-Coord. dt. 23/07/2020, if applicable.
 - ensure compliance of Ministry of Finance (MoF) Order (Public Procurement No. 1 & 2) F. No. 6/18/2019/PPD dt. 23/07/2020.
 - to submit "Model Certificate for Tenders" as per Annexure-III of Ministry of Finance (MoF) Order (Public Procurement No. 1 & 2) F. No. 6/18/2019/PPD dt. 23/07/2020.

Note: Subsequent orders/circulars to be checked and to be complied.

21. Due to COVID-19 pandemic condition prevailing in the country, BHEL/PEM may go for Remote Inspection of Offered items, if required. Vendors are requested to be equipped with the facilities/gadgets as indicated in the guidelines attached to take up the inspection REMOTELY.

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22. All other correspondence thereof shall be addressed to the undersigned by name & designation and sent at the following address:

Mr. Amit Meena, Manager/ PG-II M/s Bharat Heavy Electricals Ltd., Project Engineering Management, PPEI Building, HRD & ESI Complex, Plot No 25, Sector-16 A, Noida-201301 E-MAIL: amitmeena@bhel.in Ph. No. +91-120-4213613	Mr. IP Singh, SR. DGM/ PG-II M/s Bharat Heavy Electricals Ltd., Project Engineering Management, PPEI Building, HRD & ESI Complex, Plot No 25, Sector-16 A, Noida-201301 E-MAIL: indra.pal.singh@bhel.in Ph. No. +91-120-4368749
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23. Prices shall remain firm till completion of contract.
24. The bidders who are not registered with BHEL-PEM may apply for registration in BHEL-PEM through Registration Portal available at www.bhelpem.com-->vendor section-->online supplier registration. All credentials and/or documents duly signed & stamped related to registration has to be uploaded on the website & submit the application for registration. One set of hard copy filled-up SRF downloaded from Online Registration Portal duly signed & stamped has to be submitted.
25. Performance Bank Guarantee is not applicable for this tender.
26. Bidders to note that offers shall be submitted strictly in accordance with the requirements of tender documents. Bidders shall upload their complete offer meeting the requirements of the tender documents on e-procurement portal <https://eprocarebhel.co.in/nicgep/app>.
Following documents need to be uploaded:
- Acceptance of GCC- Rev. 07 and Corrigenda 01 to GCC Rev 07.
 - Acceptance of Special Conditions of Contract.
 - Technical PQR documents.
 - Compliance certificate of Technical specification (Duly signed & stamped by Bidder).
 - Document required in technical specification along with bid.
 - Model Certificate for Tenders
 - Bidder to mention "Quoted" in each and every box of BoQ cum Unpriced Format.
 - Along with your offer, please submit a copy of this letter duly signed & stamped on each page as token of acceptance of all terms & instructions conveyed.
 - Un-price bid, annexure-II (Cost of Withdrawal of Deviation) and Price bid along with annexure-II on BHEL e-procurement portal (<https://eprocarebhel.co.in/>)
27. Bidders have to note that Deviations from NIT are generally not acceptable. Deviations, if any, are to be listed out clearly, as per Annexure-II (Deviation Sheet – Cost of Withdrawal), of GCC Rev 07, in techno-commercial offer. Any deviation mentioned or shown separately or found hidden in offer, will not be taken cognizance of.

In case of deviations from NIT, the bidder shall give the cost of withdrawal of such deviation in Price Bid, as per Annexure-II, Deviation Sheet (Cost of Withdrawal) of GCC Rev-07. For multiple deviations, all deviations are to be mentioned in "Deviation Sheet" and "cost of withdrawal" must be mentioned separately against each deviation.

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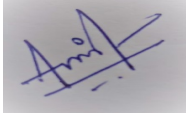
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28. All terms & conditions shall be as per NIT, SCC of Project & GCC Rev. 07 and Corrigenda 01 to GCC Rev 07. In the event of any contradiction in the terms and conditions mentioned, the order of preference shall be as mentioned in cl. no. 36 of GCTC of GCC Rev. 07 and Corrigenda 01 to GCC Rev 07.

Note - In case you are not making an offer against this enquiry, you are requested to send a regret letter so as to reach us on or before the due date.

Thanking you,
Yours faithfully,
For and on behalf of BHEL



AMIT MEENA
(MANAGER / PROJECT GROUP-II)


Enclosures:


- I. Corrigenda 01 to GCC Rev. 01, GCC rev. 07 (available at <https://pem.bhel.com>)
- II. GFR Certificate format
- III. BOQ
- IV. Technical Specification
- V. Technical PQR
- VI. SCC of Project
- VII. Guidelines for Remote Inspection of PEM BOIs
- VIII. Unpriced Format
- IX. Vendor approval format

NAME OF PROJECT: 4X270MW TSGENCO MANUGURU TPS- MOEF NORMS																
NAME OF PACKAGE: SIMPLEX STRAINER																
ENQUIRY No.: PE/PG/MMN/E-6951/2022 dated 13.04.2022																
NAME OF BIDDER:																
S. N.	DESCRIPTION	HSN CODE	UNIT	ORDER QUANTITY	UNIT EX-WORKS PRICE (DULY PACKED) (INR)	TOTAL EX-WORKS PRICE (DULY PACKED) (INR)	Freight rate in %	Freight Amount, in INR	Total Ex works + Freight (INR)	GST type	GST rate in %	GST amount in INR	TOTAL F.O.R SITE PRICE (INR)	Total FOR site Price In Words	Remarks	
A	Simplex Strainers for 400 NB		Nos.	2		₹ -		₹ -	₹ -			₹ -	₹ -	No Rupees Only		
B	Special tools and tackles (if required)		Lot	1		₹ -		₹ -	₹ -			₹ -	₹ -	No Rupees Only		
GRAND TOTAL						₹ -		₹ -	₹ -			₹ -	₹ -	No Rupees Only		

Notes:	
1	Above prices are for Design, manufacture, assembly, inspection and testing at manufacturer's and / or his sub contractor's works, properly packed and painted for transportation and delivery for following as specified in the Technical specification complete with accessories, commissioning spares (if any), counter flanges with nuts, bolts, gaskets and coatings (wherever necessary) on as required basis of Simplex Strainer.
2	All accessories, E&C spares special tools and tackles are part of strainers and to be supplied with strainers as per technical specification.
3	Price of commissioning & erection spares and other accessories not listed above shall be included in the price of equipment & shall be supplied with the equipment.
4	Price break up for items not asked are deemed to be included in A.

Bidder shall furnish this price Schedule indicating "Quoted/Not-Quoted" along with technical offer and actual prices in his price offer.

	PRE-QUALIFYING REQUIREMENTS (TECHNICAL) – SIMPLEX STRAINER	DOCUMENT NO: PE-TS-XXX-165-N004 (PQR)
		REVISION NO: 02 DATE: 11/04/2022
		SHEET: 1 of 2
FORM NO. PEM 6100-0	ENQUIRY NO.:	
	PROJECT: 4X270 MW BHADRADRI TPS FGD PACKAGE and 1X800 MW KOTHAGUDEM TPS STAGE-VII, U#12 FGD PACKAGE	
	PACKAGE: Simplex Strainer	
	<p>1. The bidder should have designed, manufactured, tested, inspected & supplied the Simplex Strainer (or similar item like Duplex Strainer/ Self Cleaning Strainer) with minimum flow of 88 CMH, which have been successfully in use for at least 1 year in thermal power plant or similar industry/ application and bidder is in business of Simplex Strainer (or similar item like Duplex Strainer/ Self Cleaning Strainer) on continuous basis.</p>	
	<p>2. The Bidders shall furnish following support documents for assessment of Bidder w.r.t. PQR as indicated at Sl. No. 1 above:</p> <p>A. Bidder's Experience list of Simplex Strainer (or similar item like Duplex Strainer/ Self Cleaning Strainer) for last 5 years (as on the enquiry/NIT date) for assessment of bidder for supplying the SIMPLEX STRAINER on regular basis for establishing business continuity in enclosed format- Annexure-1.</p> <p>Bidder shall furnish the PO copy of at least one executed Contract as indicated in the experience list.</p> <p>B. Bidder shall furnish any one from below in support of successful performance of SIMPLEX STRAINER for one year:</p> <p>i. Satisfactory Performance feedback certificates from End Customer (Owner) (in English) for at least one successfully executed contract which has been in use for atleast One year indicating salient features like year of installation/ commissioning of SIMPLEX STRAINER (or similar item like Duplex Strainer/ Self Cleaning Strainer) , rating of project, Size of Strainer, project name etc., date of issue of certificate and name/ designation of the certificate issuer for power plant/similar application industry. The date of satisfactory performance feedback certificate should not be later than the date of subject enquiry/NIT.</p> <p style="text-align: center;">OR</p> <p>ii. The bidder has been awarded One repeat contract for SIMPLEX STRAINER (or similar item like Duplex Strainer/ Self Cleaning Strainer) from End Customer (Owner) / Purchaser (in English) for power plant/similar application industry. Repeat contract shall be considered when the second contract is given by the same purchaser/ owner after lapse of minimum 1 year from execution (viz. supply) of first contract. Supporting documents for execution of the first contract like dispatch ^{N2} details or commissioning report or PG test report along with the PO Copy to be furnished, if bidder intends to submit the documents for Repeat Contracts. The date of repeat contract order should not be later than the date of subject enquiry/NIT.</p>	
<p>Notes:-</p> <p>N1 - Purchase order copy, supporting drgs/technical data sheets etc. are to be submitted along with the bid for which the bidder intends to furnish the performance</p>		

	PRE-QUALIFYING REQUIREMENTS (TECHNICAL) – SIMPLEX STRAINER	DOCUMENT NO: PE-TS-XXX-165-N004 (PQR)
		REVISION NO: 02 DATE: 11/04/2022
		SHEET: 2 of 2

	<p>feedbacks / repeat contracts for reference purpose only.</p> <p>N2 - Dispatch details shall include any one of the following documents:</p> <ol style="list-style-type: none"> a. Tax Invoice. b. Site receipt/Receipted LR. c. Customer's material dispatch clearance certificate <p>Any additional document required in support of above documents to establish the co-relation between the above documents and the supplied item shall be provided by the bidder.</p>
	<p>3. Bidder to submit all supporting documents in English, If documents submitted by bidder are in language other than English, a self-attested English translated document should also be submitted.</p>
	<p>4. Notwithstanding anything stated above, BHEL reserves the right to assess the capabilities and capacity of the bidder/collaborators to perform the contract, should the circumstances warrant such assessment in the overall interest of BHEL.</p>
	<p>5. After satisfactory fulfilment of all the above criteria/ requirement, offer shall be considered for further evaluation as per NIT and all the other terms of the tender.</p>

EXPERIENCE LIST

EQUIPMENT/PACAKAGES : SIMPLEX STRAINER

Vendor :

SL. NO.	PROJECT	CUSTOMER/CONSULTANTS	YEAR OF SUPPLY	SIZE (MM)	CAPACITY (Cub. M/ Hr)	QTY	MATERIAL OF CONSTRUCTION (HOUSING/STRAINER ELEMENT)	QUALITY OF WATER HANDLED	Performance feedback certificate from end user (enclosed/not enclosed)	

COMPANY SEAL

TELENGANA STATE POWER GEN. CO. LTD

4X270 MW BHADRADRI TPS FGD PACKAGE

And

**1X800 MW KOTHAGUDEM TPS STAGE-VII, U#12 FGD
PACKAGE**

TECHNICAL SPECIFICATION


FOR SIMPLEX STRAINER

Specification No.: PE-TS- 439/440-165-N005 (REV. 00)



BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
PPEI BLDG., SEC-16A, PLOT NO. 25
NOIDA – 201301 (UP)

783785/2022/PS-PEM-MSE

	TITLE:	TECHNICAL SPECIFICATION SIMPLEX STRAINER	SPEC. NO.: PE-TS-439/440-165-N005	
			SECTION: I	
			SUB-SECTION:	
			REV. NO. 0	DATE APR-2022
			SHEET 1	OF 1

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THIS TECHNICAL SPECIFICATION CONSISTS OF FOLLOWING SECTIONS:


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SECTION	TITLE
I	Specific Requirements
IA	Specific Technical Requirements
IB	Data Sheet – A
II	Standard Requirements
IIA	Standard Technical Requirements
IIB	Standard Quality Plan
III	Documents to be submitted by Bidder
IIIA	Guarantee Schedule (To be submitted along with the Bid by all Bidders)
IIIB	Compliance Certificate (To be submitted along with the Bid by all Bidders)
IIIC	Deviation Schedule (As per NIT Format)

Notes:

- 1) For detailed list of documents to be submitted by bidder in their technical offer, please refer cl. no. 9.0 of Section-IA.
- 2) For detailed list of documents to be submitted by vendor after award of contract, please refer cl. no. 8.0 of Section-IA.
- 3) In case there is conflict in different clauses of specification, most stringent clause (as decided by BHEL / end customer) shall be followed, if no specific deviation is taken by bidder and accepted by BHEL during tender stage in that regard.

783785/2022/PS-PEM-MSE

	TITLE:	SPEC. NO.: PE-TS-439/440-165-N005
		SECTION: I
		SUB-SECTION:
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SECTION - I

SPECIFIC TECHNICAL REQUIREMENTS

SUB-SECTION IA – Specific Technical Requirements

SUB-SECTION IB – Datasheet - A

	TITLE:	SPEC. NO.: PE-TS-439/440-165-N005
	TECHNICAL SPECIFICATION SIMPLEX STRAINER	SECTION: I
		SUB-SECTION: IA
		REV. NO. 0 DATE APR -2022
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SPECIFIC TECHNICAL REQUIREMENTS		

1.0 GENERAL:

- 1.1 This specification covers the design, material, construction features, manufacture, inspection, and testing at vendor's works and/or his sub-contractor's works with proper packing (sea worthy packing for export jobs) for delivery along with mandatory spares(if applicable), erection and commissioning spares(as applicable) complete with all accessories as per the requirements specified in the specification for 4X270 MW BHADRADRI TPS FGD PACKAGE project and 1X800 MW KOTHAGUDEM TPS STAGE-VII, U#12 FGD PACKAGE.


Note:

Simplex strainers have been detailed in Data Sheet-A, Section-1B. The bidder shall include complete supplies in his scope. Part supplies offered shall disqualify the bidder's offer. Evaluation shall be combined and further details shall be indicated in NIT.#

2.0 SCOPE OF SUPPLY:

This specification is intended to cover the design, manufacture, inspection/ testing at manufacturer's works, properly packed for transportation/delivery to site of Simplex Strainers for various types/sizes as specified in Datasheet-A.

- 2.1 The sizes, technical parameters, Material of Construction etc. of Simplex Strainers are covered in Data sheet-A.
- 2.2 The Simplex Strainers with removable strainer element shall be supplied complete with following accessories:
- Quick opening/closing mechanism for quick withdrawal/insertion of strainer elements, bolted covers will not be accepted.
 - Outer shell/housing with Counter flanges for inlet/ outlet nozzles along with fixing nuts, bolts & gaskets.
 - Supporting legs for supporting the strainers on the floor.
 - Foundation bolts, nuts etc.
 - Removable strainer element.
 - Drain & Vent Valves
 - Final Painting and packing.
- 2.3 Bidder's scope of supply & services also includes the following:
- Spares for Erection & Commissioning on as required basis, if any.
 - Set of special tools & tackles, if any.

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		SECTION: I		
		SUB-SECTION: IA		
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c) Drawings, data, calculations, test reports/ certificates, O&M Manuals, As-built drawings, etc. as specified and as necessary.

2.4 WORKS EXCLUDED FROM BIDDER'S SCOPE:

- a) Civil foundation.
- b) Site Erection & Commissioning.
- c) Differential Pressure Instruments.

3.0 The Quality Plan enclosed in the specification is for bidder's guidance only. The bidder shall Comply with these and other minimum requirements specified in the specification and shall furnish his own quality plan in the event of order based on guidance given in above, for Purchaser's approval

4.0 The Strainer shall meet the technical requirement of this Sub-Section as well as Datasheet A.

5.0 The quality of water handled by the strainers shall be as per water analysis enclosed with project enquiry.

6.0 It is mandatory for the bidder to submit along with the bid, the deviations if any – whether major or minor in the schedule of deviations only. In the absence of deviations listed in the "Schedule of Deviations", the offer shall be deemed to be in full conformity with the specification, "Not-with-standing" anything else stated elsewhere in the bidder's offer, datasheets, etc. The bidder's deviations or implied/ indirect deviations in data sheets, etc. shall not be binding on the purchaser.

7.0 The bidder shall guarantee the performance of the strainers along with the accessories for the duty conditions specified in the specification.

8.0 DRAWINGS/ DOCUMENTS DISTRIBUTION SCHEDULE:

Document submission schedule as per NIT. MDL shall be as follows

Primary Documents linked with manufacturing	
BHEL DRG NO	DRG TITLE
GA DRAWING	PE-V10-XXX-165-N001
QUALITY PLAN	PE-V10-XXX-165-N003
Secondary Documents NOT affecting manufacturing	
O&M MANUAL	PE-V10-XXX-165-N005

Drawings submitted shall be complete in all respects with revised drawing submitted incorporating all comments. Any incomplete drawing submitted shall be treated as non-submission with delays to bidder's account. For any clarification/ discussion required to complete the drawings, the bidder shall himself depute his personal to BHEL for across the table discussions/ finalizations/ submissions of drawings.

9.0 DRAWING/ DOCUMENTS TO BE SUBMITTED WITH THE BID:

- a) Compliance certificate (duly signed and stamped).

	TITLE:	SPEC. NO.: PE-TS-439/440-165-N005
	TECHNICAL SPECIFICATION SIMPLEX STRAINER	SECTION: I
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SPECIFIC TECHNICAL REQUIREMENTS		


- b) Guarantee Schedule (duly signed and stamped).
- c) GA & Cross-sectional drawings of Simplex Strainers with following: (shall be only for reference purpose, same shall be subject to approval during contract stage only).
- Bill of Material with material of construction
 - Strainer details as per Datasheet A
 - Stiffeners details (Nos., sizes etc)
 - Empty Weights of Strainers
 - Filled-up Weights of Strainers
- d) Schedule of Deviation (As per NIT).

Apart from above no other drgs. /docs. /data sheets etc. are required to be submitted at bid stage and even if furnished shall not be taken cognizance of.


10.0 BIDDER TO COMPLY FOLLOWING AFTER PLACEMENT OF PO :

1. Supplier to submit detailed ' Bill of Material ' (BOM) at the time of drawing/document submission after placement of PO. Each item of the BOM to be uniquely identified with item code no. or item serial no.
2. Supplier to ensure that all items which will find separate mention in the packing list are covered in this detailed BOM.
3. Supplier to also give the following undertaking in the BOM :


*“ The BOM provided herewith completes the scope (in content and intent) of material supply under PO No., dated
Any additional material which may become necessary for the intended application of the supplied item(s)/package will be supplied free of cost in most reasonable time. ”*

	TITLE : TECHNICAL SPECIFICATION	SPEC. NO. PE-TS- 439/440-165-N005	
	DATA SHEET-A	SECTION : I	
	SIMPLEX STRAINER	SUB-SECTION: IB	
		REV. NO. 00	DATE: APR 2022
SL.NO	PROJECT : 1X800 MW KOTHAGUDEM TPS STAGE-VII, U#12 FGD PACKAGE		

S.No.	DESCRIPTION	UNIT	1X800 MW KOTHAGUDEM TPS STAGE-VII, U#12 FGD PACKAGE
1.0	Nos. of Strainers required	NOS.	Two (2) Nos.
2.0	Type of Strainers Required		<i>Simplex Basket Type</i>
3.0	Capacity	cu.m/hr	176
4.0	Connecting Inlet/Outlet Pipe Size, NB	mm	250 NB
5.0	a) Design Pressure	kg/cm ² (g)	10
	b) Design Temperature	Deg. C	60
6.0	a) Perforation Size		Wire mesh of 18 gauge & 8 mesh screen shall be provided for strainer basket. (Basket to be designed to suit the design differential pressure of 1.5 bar)
7.0	Maximum Permissible Pressure Drop under Clean condition	MWC	1.0 MWC at full flow
8.0	Location		Inside FGD ACW Pump House
9.0	Quality of Water Handled		Clarified Water with COC 5
10.0	Ratio of Clear Flow Area vis-à-vis Pipe Inlet Area	Nos.	4.0 (Screen (strainer) flow area shall be at least four times pipe sectional area. Flow area in any portion of Basket strainer assembly shall not be less than the pipe cross sectional area.)
11.0	<u>MATERIALS OF CONSTRUCTION</u>		
11.1	Body		Fabricated mild steel : IS-2062 (Tested quality) Inside and outside of basket body shall be protected with one coat of high build zinc phosphate primer and three coats of Chlorinated rubber paint to a total thickness of 200 microns.

	TITLE : TECHNICAL SPECIFICATION	SPEC. NO. PE-TS- 439/440-165-N005	
	DATA SHEET-A	SECTION : I	
	SIMPLEX STRAINER	SUB-SECTION: IB	
		REV. NO. 00	DATE: APR 2022
SL.NO	PROJECT : 1X800 MW KOTHAGUEM TPS STAGE-VII, U#12 FGD PACKAGE		

11.2	Strainer Element including stiffeners		SS 316
11.3	All Internal Fasteners		SS 316
11.4	All External Fasteners		High Tensile Steel (IS 1363)
11.5	Drain & Vent Valves		Body & Bonnet : Gun Metal
11.6	Counter Flanges		Carbon Steel IS 2062 Gr B
12.0	Flange/Counter Flange Drilling Standard		EN1092-1/ASME B16.5
13.0	Max. Permissible Weight of Strainer Basket required to be lifted by operators for routine cleaning of strainer	Kg	Shall not exceeds 20Kg
14.0	Max. Height of Strainer Basket excluding Handle (For ease of Handling)		Shall not exceed 1200mm
15.0	Min. Required Thickness of Strainer Housing/Body	mm	6.0
16.0	Platform to be provided all round (with hand railings) at strainers top (with ladder) for attending basket elements for cleaning by operator	(Y/N)	N
16.1	Width of all round platform	mm	NA
17.0	Two adjacent strainers of one unit, inter-connecting platform required (layouts enclosed)?	(Y/N)	N
18.0	Mandatory Spares (Enclosed)	(Y/N)	Not Applicable
19.0	Water Analysis (Enclosed)	(Y/N)	Y
20.0	Suitable reinforcement for strainer element shall be provided of MOC same as strainer element.	(Y/N)	Y

	TITLE : TECHNICAL SPECIFICATION		SPEC. NO. PE-TS- 439/440-165-N005	
	DATA SHEET-A		SECTION : I	
	SIMPLEX STRAINER		SUB-SECTION: IB	
			REV. NO. 00	DATE: APR 2022
SL.NO	PROJECT : 1X800 MW KOTHAGUDEM TPS STAGE-VII, U#12 FGD PACKAGE			

21.0	Basket Strainer shall be provided with lifting lugs and suitable mounting arrangement.	(Y/N)	Y
22.0	Suitable Vent and drain valves shall be provided for the strainers.	(Y/N)	Y

ANNEXURE-II

TREATED WATER QUALITY

(DESIGN ANALYSIS OF CLARIFIED WATER)

[After addition of 50 ppm Alum, 20 ppm Lime ,1 ppm Polyelectrolyte and
5 ppm Chlorine on 100% purity basis)]

DESIGN ANALYSIS OF CLARIFIED WATER:

CONSTITUENTS	As	CONTENT	
Calcium	CaCO ₃	128.9	ppm
Magnesium	CaCO ₃	53.52	ppm
Sodium	CaCO ₃	73.44	ppm
Potassium	CaCO ₃	1.02	ppm
Iron in Soln.	Fe	0.1	ppm
Hydrogen (FMA)	CaCO ₃	-	ppm
TOTAL CATIONS (except iron)	CaCO ₃	256.88	ppm
Bicarbonate	CaCO ₃	143.4	ppm
Carbonate	CaCO ₃	0.53	ppm
Hydroxide	CaCO ₃	0.02	ppm
Sulphate	CaCO ₃	59.85	ppm
Chloride	CaCO ₃	50.82	ppm
Nitrate	CaCO ₃	1.21	ppm
Phosphate	CaCO ₃	-	ppm
Fluoride	CaCO ₃	1.05	ppm
TOTAL ANIONS	CaCO ₃	256.88	ppm
Reactive Silica	SiO ₂	10	ppm
Total Suspended Solid	CaCO ₃	10 ppm for normal condition	15 ppm (overload condition)
Conductivity at 25 deg C		450	Microsiemens/cm (max)
pH value at 25 ⁰ C	-	7.62	
Turbidity		Not to exceed 15	NTU (max) 10 NTU for normal condition

COC for CW/ACW system is 5.



TITLE : TECHNICAL SPECIFICATION

DATA SHEET-A
SIMPLEX STRAINER

SPEC. NO. PE-TS- 439/440-165-N005

SECTION : I

SUB-SECTION: IB

REV. NO. 00

DATE: APR-2022

SL.NO PROJECT : 4X270 MW BHADRADRI TPS FGD PACKAGE

4X270 MW BHADRADRI TPS FGD PACKAGE

S.No.	DESCRIPTION	UNIT	
1.0	Nos. of Strainers required	NOS.	Two (2) Nos.
2.0	Type of Strainers Required		<i>Simplex Basket Type</i>
3.0	Capacity	cu.m/hr	1080
4.0	Connecting Inlet/Outlet Pipe Size, NB	mm	400 NB
5.0	a) Design Pressure	kg/cm ² (g)	10
	b) Design Temperature	Deg. C	60
6.0	a) Perforation Size		2 mm
	b) Perforated Sheet thickness		To suit the design differential pressure of 1.5 bar but not less than 1.5 mm.
7.0	Maximum Permissible Pressure Drop under Clean condition	MWC	1.0
8.0	Location		Inside FGD Pump House
9.0	Quality of Water Handled		Clarified Water
10.0	Ratio of Clear Flow Area vis-à-vis Pipe Inlet Area	Nos.	4.0
11.0	<u>MATERIALS OF CONSTRUCTION</u>		
11.1	Body		Carbon Steel as per IS 2062 Gr B
11.2	Strainer Element including stiffeners		AISI 304



TITLE : TECHNICAL SPECIFICATION

DATA SHEET-A
SIMPLEX STRAINER

SPEC. NO. PE-TS- 439/440-165-N005

SECTION : I

SUB-SECTION: IB

REV. NO. 00

DATE: APR-2022

SL.NO PROJECT : 4X270 MW BHADRADRI TPS FGD PACKAGE

4X270 MW BHADRADRI TPS FGD PACKAGE

11.3	All Internal Fasteners		SS 304
11.4	All External Fasteners		High Tensile Steel (IS 1363)
11.5	Drain & Vent Valves		Body & Bonnet : SA216-WCB – for Cast Steel, SA105&SA420 – for Forged Steel
11.6	Counter Flanges		Carbon Steel IS 2062 Gr B
12.0	Flange/Counter Flange Drilling Standard		EN1092-1/ASME B16.5
13.0	Max. Permissible Weight of Strainer Basket required to be lifted by operators for routine cleaning of strainer	Kg	Shall not exceeds 20Kg
14.0	Max. Height of Strainer Basket excluding Handle (For ease of Handling)		Shall not exceed 1200mm
15.0	Min. Required Thickness of Strainer Housing/Body	mm	6.0
16.0	Platform to be provided all round (with hand railings) at strainers top (with ladder) for attending basket elements for cleaning be operator	(Y/N)	N
16.1	Width of all round platform	mm	NA
17.0	Two adjacent strainers of one unit, inter-connecting platform required (layouts enclosed)?	(Y/N)	N
18.0	Mandatory Spares (Enclosed)	(Y/N)	Not Applicable
19.0	Water Analysis (Enclosed)	(Y/N)	Y

4X270 MW BHADRADRI FGD
WATER ANALYSIS**RAW WATER ANALYSIS**

Sr.No	Parameters	Unit	Results
1.	Physical characteristics		
	Colour	Hazen	8.0
	pH at 25 °C	--	7.79
	Conductivity at 25 °C	µs/cms	400
	Dissolved solids	ppm	282
2.	Cations		
	Calcium Hardness	ppm as CaCO ₃	96
	Magnesium Hardness	ppm as CaCO ₃	52
	Sodium + Potassium	ppm as CaCO ₃	76.6
	Iron	ppm as CaCO ₃	Traces
	Total Cations	ppm as CaCO ₃	224.6
3.	Anions		
	M- Alkalinity	ppm as CaCO ₃	136.0
	Chlorides	ppm as CaCO ₃	72.0
	Sulphate	ppm as CaCO ₃	15.0
	Nitrates	ppm as CaCO ₃	1.6
	Total Anions	ppm as CaCO ₃	224.6
4.	Total Hardness	ppm as CaCO ₃	148
5.	P - Alkalinity	ppm as CaCO ₃	Nil
6.	Dissolved Silica	ppm as SiO ₂	1.1
7.	Colloidal Silica	ppm as SiO ₂	2.0
7.	Turbidity	NTU	250
8.	Total suspended solids	ppm	500

Note: Other parameters not indicated in Raw Water Analysis shall be considered as Nil

CLARIFIED WATER ANALYSIS

Sl.No.	Constituent	Units	Values
1.	Total Suspend Solids at outlet of clarifier.	ppm	10
2.	Turbidity	NTU	10

Note: The other parameters in Clarified water shall be remaining unchanged as present in Raw Water.

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	TITLE:	SPEC. NO.: PE-TS-439/440-165-N005
	TECHNICAL SPECIFICATION SIMPLEX STRAINER	SECTION: II
		SUB-SECTION: IIA
		REV. NO. 0 DATE APR-2022
	STANDARD TECHNICAL REQUIREMENTS	SHEET 1 OF 7

SECTION - II

STANDARD TECHNICAL REQUIREMENTS

SUB-SECTION IIA – Standard Technical Requirements

SUB-SECTION IIB – Standard Quality Plan

	TITLE:	SPEC. NO.: PE-TS-439/440-165-N005
	TECHNICAL SPECIFICATION SIMPLEX STRAINER	SECTION: II
		SUB-SECTION: IIA
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STANDARD TECHNICAL REQUIREMENTS		

1.0 GENERAL:

1.1 This specification covers the standard design, material, construction features, manufacture, inspection, and testing at vendor's works and/or his sub-contractor's works with proper packing (sea worthy packing for export jobs) for delivery along with mandatory spares(if applicable), erection and commissioning spares(as applicable) complete with all accessories as per the requirements specified in the specification. Subsequent sections presents the general guidelines and details of Simplex Strainers to be procured under the scope of this package.

2.0 CODES AND STANDARDS:

2.1 The design, manufacture, performance & testing of the Simplex Strainers complete with all accessories shall conform to the latest editions of the following relevant codes and standards.

- **IS/BS/DIN/US:** Standards regarding pressure vessels, pipes, flanges & others as necessary.
- **IS/BS/DIN/ASTM:** Standards for material specification & testing procedures.

2.2 In case of any conflict between the above codes/standards and this specification, the later shall prevail & in case of any further conflict in the matter, the interpretation of the specification by the BHEL engineer shall be final and binding.

3.0 DESIGN REQUIREMENTS:

3.1 Unless specified in the specification, necessary manufacturer's standard & proven models of the strainers shall be supplied.

3.2 The strainer shall be designed for streamlined flow with minimum pressure drop.

3.3 The strainer shall be horizontally mounted with in-line flange connection.

3.4 The strainer body shall be of robust construction and shall incorporate integral pads.

3.5 The Strainer element shall be made from perforated sheet with sheet thickness not less than 1.5 mm.

Adequate numbers of stiffeners of material each with minimum thickness 3mm and minimum width 20 mm to be provided to support the perforated sheet against the fluid pressure and impact of debris.

For any additional or alternative details of Strainer Elements, please refer Datasheet-A.

3.6 The strainer shall be provided with drain/blow off, air vent connection. Strainer shall be hydraulically tested to 1.5 times the design pressure.

3.7 Flanges shall conform to the standard indicated in the design data sheet. Undrilled flanges shall not be acceptable.

3.8 The welding procedure shall be as per the approved quality plan enclosed herewith.

3.9 The strainer shall be complete for safe, proper, & continuous operation. Mechanical stresses shall be kept within the allowable limits specified by relevant codes/standards.

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	TECHNICAL SPECIFICATION SIMPLEX STRAINER	SECTION: II
		SUB-SECTION: IIA
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		SHEET 3 OF 7
STANDARD TECHNICAL REQUIREMENTS		

- 3.10 In design, special attention shall be given to ease of maintenance, repair & cleaning.
- 3.11 Suitable corrosion allowances shall be provided where ever necessary.
- 3.12 Unless otherwise stated in Datasheet-A, the inlet & outlet of strainer shall be coaxial without any offset between the center lines of inlet and outlet pipes.

4.0 MATERIAL:

- 4.1 The material of construction of strainer and other components shall be as specified in Datasheet-A.
- 4.2 The materials of construction for various components specified in Data sheet-A are the minimum requirements and materials of construction not specified shall be similarly selected by the bidder for the intended duty which shall be further subject to purchaser's approval.
- 4.3 All materials used for manufacture of the "Simplex" strainer and its components shall be of tested quality. Relevant test certificates shall be made available to the purchaser before taking up fabrication work. In the absence of such certificates, the vendor shall arrange to carry out necessary tests required by the code at his cost.

5.0 CONSTRUCTIONAL FEATURES:

- 5.1 The strainers shall be floor mounted supplied with foundation bolts, nuts etc.
- 5.2 The strainers shall be provided with cover for providing access to the strainer cage for removal for cleaning. The opening/closing of the covers shall be quick opening mechanism; bolted covers will not be accepted. The quick opening/closing mechanisms shall be hinged type and basket strainers of Simplex Strainers shall be suitable for operating by one operator alone without any lifting/handling device. Each strainer chamber shall be provided with vent and drain connection. The above shall be reviewed during drawing approval in the event of the order and shall be subject to BHEL approval. Further, same shall be demonstrated by the Bidder at site also after erection.
- 5.3 Strainer body shall be of robust construction designed to withstand the pressure as mentioned under data sheet – A. The body should be provided with pedestal / pads suitable for floor mounting. The body shall be provided with amply sized drain connection with drain valve to allow cleaning of the collected debris.
- 5.4 The strainer baskets shall be provided with handles for easy removal of the baskets. Design of strainer shall incorporate the strengthening stiffeners on the basket.
- 5.5 The strainer body shall be provided with suitable lifting lugs, eye bolts etc. to facilitate erection and maintenance.
- 5.6 Each strainer shall be enclosed in a protective cover to protect it from damage during shipping and installation.

6.0 WELDING:

	TITLE:	SPEC. NO.: PE-TS-439/440-165-N005
	TECHNICAL SPECIFICATION SIMPLEX STRAINER	SECTION: II
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STANDARD TECHNICAL REQUIREMENTS		

6.1 Continuous welding is to be done at joints for perforated sheet, Retainer ring (Top ring/plate) and Bottom Disc. The minimum overlap for continuous welding for perforated sheet shall be minimum 10 mm.

6.2 Only TIG Welding is to be done and no arc welding is to be used for fabrication of Strainer Element.

7.0 CLEANING PROTECTION AND PAINTING REQUIREMENTS:

7.1 Pickling and passivation of SS parts is to be done after welding and dressing work.

7.2 Hydraulic tested equipment shall not be packed till the inside surface becomes dry.

7.3 PAINTING:

7.3.1 The surfaces of stainless steel, Gunmetal, brass, bronze and non-metallic components shall not be applied with any painting.

7.3.2 The steel surface to be applied with painting shall be thoroughly cleaned before applying painting by brushing, shot blasting etc as per the agreed procedure.

7.3.3 Internal surfaces shall be given a protective coating of coal tar based epoxy paint with a dry film thickness of minimum 200 microns.

7.3.4 For all the steel surfaces exposed to (outdoor installation) atmosphere, a coat of chlorinated rubber based zinc phosphate primer of minimum thickness DFT of 50 microns followed up with undercoat of chlorinated rubber paint of minimum DFT of 50 microns shall be applied. Then, intermediate coat consisting of one coat of chlorinated rubber based paint pigmented with Titanium di-oxide with minimum DFT of 50 microns and topcoat consisting of two coats of chlorinated rubber paint of approved shade and colour with glossy finish and DFT of 100 microns shall be provided. Total DFT of paint system shall not be less than 200 microns.

7.3.5 For all the steel surfaces inside the (indoor installation) building, a coat of red oxide primer of minimum thickness of 50 microns followed up with undercoat of synthetic enamel paint of minimum thickness of 50 microns shall be applied. The top coat shall consist of two coats each of minimum thickness of 50 microns of synthetic enamel paint and thus total thickness shall be minimum 200 microns

7.4 Particular care shall be taken to ensure that all sand and loose material is properly removed by fettling.

7.5 Ends shall be protected from external damage and sealed against the ingress of dirt.

7.6 A thin sheet steel circular blanking plate of a diameter 1/4" less than the bolt holes inner PCD shall be firmly fixed to the flange faces by the application of adhesive after first ensuring that the flange faces have been thoroughly degreased.


7.7 A thin coat of Evostick 613 adhesive shall be applied to the flange face and the blanking plate and then allowed to dry for 15-20 minutes. The coated face of the blanking plate should then be offered up to the face of the flange taking care that the plate is concentric with the flange. Firm pressure shall be applied to ensure intimate contact between plate and flange. One coat of carbon yellow slush shall then be applied over the face of the flange and blanking plate.

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		SHEET 5 OF 7
STANDARD TECHNICAL REQUIREMENTS		

- 7.8 A wooden block should then be bolted to the flange using a minimum of four bolts.
- 7.9 In addition to the specified method for sealing the equipment, alternative method may be offered. These may be used subject to prior approval from BHEL.
- 7.10 Packing shall be sturdy and adequate to protect assemblies, components, and accessories from injury by corrosion, dampness, heavy rains, breakage and vibration encountered during transportation, handling and storage at the plant site.

8.0 INSPECTION & TESTING:

- 8.1 The manufacture shall provide inspection to establish and maintain the quality of workmanship in his works and that of his sub-contractors to ensure the mechanical accuracy of each component. He shall conduct all tests required to ensure that the equipment furnished shall conform to the requirements of applicable codes. All tests and test procedures proposed by the manufacturer shall be submitted to BHEL on the enclosed quality plan.
- 8.2 BHEL and/or customer's representative shall have access to inspect during manufacturing and at various stages of inspection. The final inspection shall be made by BHEL and/ or customer's representative to visit the supplier's work for final inspection. No material shall be dispatched unless inspected and/or approved by BHEL.
- 8.3 The following minimum tests shall be carried over on the finished strainers but not limited to-
- a) Identification of material with test certificates as per Data Sheet-A.
 - b) Verification of dimensional ratings etc. as per the approved specifications and drawings/ catalogues including proof of marking.
 - c) Penetrant testing on all welds seams and exposed surfaces. The test procedures shall conform to the requirements of ASTM E 165. Acceptance criteria shall be as per clause 14.1.2 of latest edition of EJMA. For exposed surfaces there shall be no visible defects.
 - d) All castings and forgings shall be free from blowholes, porosity, shrinkage defects, cracks or other defects. They have to be smooth and well cleaned.
 - e) Any defect which will not machine out during the final machining of casting / forging will be gauged out and repaired using an approved repair procedure and inspected to see that the defect is fully removed. Any indication of any defect in casting/ or forging which proved to penetrate deeper than 2 ½ % of the finished thickness of the forgings/ casting shall be reported to BHEL, giving location, length, width and depth and acceptability of the repair to be established before any rectification work is put in hand.
 - f) All ends shall be free from all burrs. Butt-welded or socket welded ends should be prepared by grinding as per standards and codes. Unacceptable defects for butt-welded and socket weld ends shall be removed by chipping and grinding to suit approved qualified welding procedure.

	TITLE:	SPEC. NO.: PE-TS-439/440-165-N005
	TECHNICAL SPECIFICATION SIMPLEX STRAINER	SECTION: II
		SUB-SECTION: IIA
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		SHEET 6 OF 7
STANDARD TECHNICAL REQUIREMENTS		

- g) Hydraulic test shall be at 1.5 times the operating pressure.
- h) Measurement of perforation size & sheet thickness shall be carried out before taking the strainer for assembly.
- i) Qualification of relevant welding procedures and welders qualification as per ASTM sec. IX.
- j) Examination of radiography including radiographic techniques, radiographic examination of the longitudinal seam. The test procedures shall be as per ASME sec. V.
- k) Examination and approval of stress relieving charts/process is required.
- l) Production of necessary certificates of actual test for the proven design as per the requirement for pressure drop and micron rating test.
- m) A pre dispatch inspection will be carried out for all material/ component/ equipment/assemblies.
- n) Verification of completeness and acceptance of all previous test, inspection and check performed and satisfactory documentation of the same.
- o) Check for appearance and cleanliness.
- p) Check for identification, painting, preservation and packing.

9.0 Packing procedure before dispatch

The purpose of this procedure is to outline the requirements and procedures for protecting the equipment's during shipment and preserving during the storage.

9.1 Preparation for Packing:

- After hydro testing, operation, all fluids e.g. water etc., shall be completely drained from all Strainer's parts, and the equipment blown dry.
- All material shall be cleaned internally and externally to remove, scale, rust fillings and any other foreign material.
- The Strainer shall be placed on a strong wooden base & bolted to the wooden base using the foundation holes for further transportation up to site.

9.2 Protection of parts:

- Strainer shall be packed in properly in high grad bubble plastic wrap for transportation, and long storage at site.
- All finished (or) machined (External C.S. Surfaces shall be protected against corrosion with corrosion resisting coating, which is easily removable (Compound shall be such that it will remain on the surface at temperature normally encountered during shipping & storage).
- All machined surfaces shall be protected from mechanical damage. All external unfinished carbon steel surfaces shall be sand blasted & shall be coated with rust preventive primer.

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		SHEET 7 OF 7
STANDARD TECHNICAL REQUIREMENTS		


- Flanged opening if any shall be covered with blank flanges sealed with blank gasket of natural rubber or equivalent. Butt welded opening shall be closed with temporary closing covers. Internal threads shall be protected with metal plug sealed with Teflon tape (if applicable). External thread shall be protected with PVC sleeve.
- All the equipment shall be protected for entire period of dispatch, storage and erection against corrosion, incidental damage due to vermin, sunlight, rain, high temperature, humid atmosphere, rough handling in transit and storage. All MS parts which are not painted shall be provided with coating of grease.
- Clay Desiccant or such other moisture absorbing material in small cotton bags shall be placed and tied at various points on the equipment, wherever necessary.

9.3 Preservation

The equipment's shall be stored under closed/open space in packed condition until installation. The packages containing loose plates and gaskets are to be protected from extreme climatic conditions.


9.4 Photographs

Bidder to take photographs of all parts and sent to engineering deptt along with all inspection reports before final dispatch.


	MANUFACTURER/ BIDDER/ SUPPLIER NAME & ADDRESS	STANDARD QUALITY PLAN		SPEC. NO : PE-TS-XXX-165-N005	DATE: XX.XX.XXXX
		CUSTOMER :		QP NO.: PE-QP-999-165-N004	DATE: 28.12.2020
		PROJECT:		PO NO.:	DATE:
		ITEM: SIMPLEX/DUPLEX STRAINER	SYSTEM: ACW/DMCW	SECTION:	SHEET 6 of 7

S. No.	COMPONENT / OPERATION	CHARACTERISTIC CHECKED	CLASS	TYPE OF CHECK	EXTENT OF CHECK		REFERENCE DOCUMENTS	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY			REMARKS
					M	C/N			M	C	N			

1	2	3	4	5	6		7	8	9	D	10			11
		4)CAPACITY TEST FOR WET LOAD	MA	PHYSICAL	10%	10%	REFER REMARKS	NO BREAKAGE / DAMAGE	TC	√	P	W	-	DRY SAND TO FULL VOLUME TO BE PUT IN STRAINER BASKET SHALL BE WETTED BY WATER TILL WATER STARTS SEEPING & LIFTING IT WITH REMOVABLE BAR/HANDLE FOR 5 MINUTES.
4.2	PAINTINGS	1) UNIFORMITY 2) SHADE	MI	VISUAL	100%		APPD. DRGS/ DATASHEET	APPD. DRGS/ DATASHEET	IR	√	P	V	-	
4.3	PACKING	PACKING QUALITY	MA	VISUAL	100%	100%	BHEL TECHNICAL SPEC./ PACKING PROCEDURE	BHEL TECHNICAL SPEC./ PACKING PROCEDURE	IR	√	P	W	-	

BHEL				BIDDER/ SUPPLIER		FOR CUSTOMER REVIEW & APPROVAL			
ENGINEERING		QUALITY		Sign & Date	Seal	Doc No:	Sign & Date	Name	Seal
Prepared by:	Prashant  NISHANT	P. AGARWAL/ N. SHEKHAR	Checked by:	Ashish Panigrahi	ASHISH PANIGRAHI				
Reviewed by:	SHEKHAR Vishal Kumar Yadav	VISHAL KR. YADAV	Reviewed by:	RITESH KUMAR JAISWAL	RK JAISWAL				

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	TITLE:	SPEC. NO.: PE-TS-439/440-165-N005
	TECHNICAL SPECIFICATION SIMPLEX STRAINER	SECTION: III
		SUB-SECTION:
	DOCUMENT TO BE SUBMITTED BY BIDDER	REV. NO. 0 DATE APR-2022
		SHEET 1 OF 1

SECTION - III


SCHEDULES

SUB-SECTION IIIA - GUARANTEE SCHEDULE

SUB-SECTION IIIB - COMPLIANCE CERTIFICATE

SUB-SECTION IIIC – DEVIATION SCHEDULE (AS PER NIT FORMAT)

783785/2022/PS-PEM-MSE

	TITLE:	SPEC. NO.: PE-TS-439/440-165-N005
	TECHNICAL SPECIFICATION SIMPLEX STRAINER	SECTION: III
	SCHEDULE OF PERFORMANCE GUARANTEES	SUB-SECTION:
		REV. NO. 0 DATE APR-2022
	SHEET 1 OF 1	

S.NO.	DESCRIPTION	UNIT	VALUE
FOR 4X270 MW BHADRADRI TPS FGD PACKAGE			
1.	Pressure drop across the Strainer (i.e. between inlet & outlet nozzle) under clean condition and Normal flow condition	MWC	
FOR 1X800 MW KOTHAGUEDEM TPS STAGE-VII, U#12 FGD PACKAGE			
1.	Pressure drop across the Strainer (i.e. between inlet & outlet nozzle) under clean condition and Normal flow condition	MWC	




	TITLE:	SPEC. NO.: PE-TS-439/440-165-N005	
	TECHNICAL SPECIFICATION SIMPLEX STRAINER	SECTION: III	
		SUB-SECTION:	
	COMPLIANCE CERTIFICATE	REV. NO. 0	DATE APR-2022
		SHEET 1	OF 1

The bidder shall confirm compliance with following by signing/ stamping this compliance certificate and furnish same with the offer.

- a) The scope of supply, technical details, construction features, design parameters etc. shall be as per technical specification & there are no exclusions/ deviations with regard to same.
- b) QP/ test procedures shall be submitted in the event of order based on the guidelines given in the specification & QP enclosed therein.
- c) QP will be subject to BHEL/Customer approval in the event of order & customer hold points for inspection/ testing shall be marked in the QP at the contract stage. Inspection/ testing shall be witnessed as per same apart from review of various test certificates/ Inspection records etc.
- d) All drawings/data – sheets etc. to be submitted during contract shall be subject to BHEL/ Customer approval.
- e) There are no other deviations with respect to specification other than those furnished in the 'Schedule of Deviations'.
- f) The offered materials should be either equivalent or superior to those specified. Also for components where material is not specified it shall be suitable for intended duty. All materials shall be subject to approval in the event of order.
- g) The commissioning spares (if any) are supplied on 'As Required Basis' & prices for same included in the base price (If bidders reply to this is "No commissioning spares are required" and if some spares are actually required during commissioning same shall be supplied by bidder without any cost to BHEL).
- h) All sub vendors shall be as per BHEL/ Customer approved list.
- i) Any special tools & tackles, if required, shall be in bidder's scope.

SPECIAL CONDITIONS OF CONTRACT (REV 04)
FOR 4 X 270 MW BHADRADRI TPS



These Conditions shall be read in conjunction with General Condition of Contract (GCC) enclosed along with the tender enquiry. In case of any conflict or inconsistency, the requirement of SCC shall prevail over the GCC and its corrigendum, if any.

1.0	Project Name		4X270 MW TSGENCO BHADRADRI TPS
2.0	Ultimate Customer		TSGENCO 4 X 270MW Bhadradi TPS Manuguru Mandal, Khammam(dist.) - 507117, Telangana (State)
3.0	Delivery Address (Ship To)		Construction Manager, Bharat Heavy Electrical Limited site office, BTPS Manuguru, Khammam District, Telangana - 507117
4.0	Location of Plant		The distance from Manuguru to Major cities in state: Hyderabad-345KM, Warangal-180km, Bhadrachalam-38km, Kothagudem-70km and Khammam-130km, Vijayawada-195km. Village: RAMANUJAVARAM District: KHAMMAM State : TELANGANA, Nearest Airport: The nearest airport is Vijayawada Airport but the most used airport is the Hyderabad International Airport. Nearest Railway Station: Manuguru railway station is 10KM from nearby town. However Warangal/Vijaywada railway Station is major railway station near to Manuguru.
5.0	Consignee Address (Bill To)		BHEL, POWER SECTOR - PROJECT ENGINEERING MANAGEMENT, POWER PROJECT ENGINEERING INSTITUTE, PLOT NO.25, SECTOR-16A, NOIDA-201301 STATE - UTTAR PRADESH

Handwritten signature and date: 25/8/17






SPECIAL CONDITIONS OF CONTRACT (REV 04)
FOR 4 X 270 MW BHADRADRI TPS

	Notes:	<ol style="list-style-type: none"> 1. Consignee address (Bill To) in Invoice & LR should be strictly as per Sl. No. 05. Place of supply along with name of state to be clearly indicated by vendor in invoice. 2. Delivery address (Ship To) in Invoice and LR should be as per Sl. No. 03. 3. Invoice should clearly specify "Billing from" and "Shipping from" addresses. 4. Vendor to note that to effect "Sale in Transit", BHEL shall issue "Delivery Order" to the Transporter for transferring the ownership from BHEL to customer (TSGENCO). 5. It is Vendor's responsibility to ensure availability of trucks well in advance for dispatch of material to meet contractual delivery requirement. <p>Delivery Order shall be carried by transporter along with other dispatch documents.</p>
6.0	Buyer and Paying Authority 	Packages for which PO is placed by BHEL-PSWR & LOA is issued by BHEL-PEM - Buyer and Paying Authority shall be <u>BHEL-PSWR</u> .
7.0	Mode of Dispatch	By Road/Rail/Sea on Door Delivery and freight Pre-Paid Basis.
8.0	Road Permit / E-waybill 	To be arranged by Supplier, if required
9.0	Transit Insurance	<p>In BHEL Scope. Vendor shall inform the following details of dispatches to the Underwriter (refer details below) under intimation to BHEL-PEM and BHEL Site office:</p> <ol style="list-style-type: none"> (1) Policy No. (2) Consignee Name. (3) Consignment Details (items with their weights and value (in INR)). (4) Project Name and P.O. No. (5) LR No. and date, Despatch origin and destination details, Inv. No.
	Policy No.	500300/21/15/02/00000031 (Marine policy) 500300/44/15/04/40000014 (SCE Policy no)

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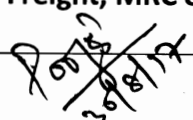
SPECIAL CONDITIONS OF CONTRACT (REV 04)
FOR 4 X 270 MW BHADRADRI TPS

	Name of the insurance company details:	Mr. Ashim Mukherjee (CRM) United India Insurance Co. Ltd (UIIC) (A company wholly owned by Govt. of India) D-24 & E-25, 2nd Floor, Himalaya House, 23, KG Marg, New Delhi, Pin - 110001. Mb. No. 09899720652, Telephone no.: 01123318077, 41521760 E-mail id: (akmukherjee@uiic.co.in , corpcelldel@uiic.co.in)
10.0	GST Registration No. 	BHEL-PEM: 09AAACB4146P2ZC
11.0	Customer GST & PAN Nos.	TSGENCO GST REGN NO. - 36AAFCT0257Q3ZT  PAN No. - AAFCT0257Q
12.0	 Unloading, Storage and Movement of Material within Site	<ul style="list-style-type: none"> - By BHEL site office for Supply packages. (The Vendor shall furnish LR wise Gross Wt. and net weight of the consignment in attached format annex-II for the purpose of handling the consignment by BHEL site loading/unloading contractor). - By Vendor for Turnkey i.e. Supply and Erection & Commissioning Packages.
13.0	Provision of facilities at Site (Applicable for Turnkey Packages)	<p>Construction Power: it will be provided at one point of plant boundary free of cost.</p> <p>Construction Water: it will be provided at one point of plant boundary free of cost.</p>
14.0	Inspection Agency (Domestic & Imported supply supplies)	Later

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SPECIAL CONDITIONS OF CONTRACT (REV 04)
FOR 4 X 270 MW BHADRADRI TPS

15.0	<p>Dispatch Documents required (to be furnished by Vendor for payment)</p> <p style="text-align: center;"></p>	<p>Vendor to furnish the scanned copy of dispatch documents immediately on the date of dispatch for billing at BHEL end.</p> <p>For materials originating from non-Indian Territory</p> <p>(a). Three (3) original and Three (3) copies of clean bill of lading or One (1) clean original Airway Bill & Three (3) copies, in case of air freight.</p> <p>(b). One (1) original and Three (3) copies of signed Invoices</p> <p>(c). One (1) original and Three (3) copies of Packing List (clearly showing number of packages, gross weight and net weight).</p> <p>(d). Three (3) copies of certificate of country of origin.</p> <p>(e). Copy of Customer/BHEL MDCC.</p> <p>(f). Three (3) copies of inspection certificate, if any, issued by the customer/his authorised representative.</p> <p>(g). Three (3) of certificate from the vendor to the effect that drawings and catalogues for customs clearance purpose have been kept with the packages for shipment.</p> <p>(h). Three (3) copies of certificate from the vendor to the effect that the contents in each case are not less than that entered in the invoices and guaranteed as new and as per the relevant technical specifications.</p> <p>(i) Shipping Specification – One (1) copy.</p> <p>(j). Quality Certificate – One (1) copy.</p> <p>(k). Approved Test Certificates, if any. - Three (3) copies.</p> <p>(l). Guarantee Certificate – One (1) Original + One (1) copy.</p> <p>(m). Inspection Reports – One (1) Original + One (1) copy.</p> <p>(n). PVC Calculation and copy of all applicable indices, if PVC applicable. – Two (2) copies.</p> <p>For Claiming Dispatch payments (for materials originating from Indian territory), Freight, MRC & Services Payments - refer GCC.</p> <p style="text-align: center;"></p>
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SPECIAL CONDITIONS OF CONTRACT (REV 04)
FOR 4 X 270 MW BHADRADRI TPS

16.0	Material Receipt Certificate (MRC)	<p>For Packages wherever E&C is in the scope of Vendor, The vendor shall arrange Material Receipt Certificate from the project site, duly signed by Customer and BHEL-Site after receipt & physical verification of the material at site.</p> <p>For Supply Packages, Material Receipt Certificate shall be arranged by BHEL-PEM. Vendor to provide copy of receipted LRs to enable BHEL-PEM to obtain MRC from site.</p>
17.0	Taxes & Duties (For Domestic Bidder) 	<p>All bidders/vendors to note that this project is a Non-Mega power Project. However Essentiality certificate shall be issued by TSGENCO (customer) for availing concessional custom duty under Project Import Regulations.</p> <p>Essentiality certificate shall be issued by TSGENCO through BHEL for the items to be imported by the vendor for specified items, limited to CIF content mentioned in the offer/order, for availing concessional custom duty.</p> <p>The bidder has to indicate in their offer, the import contents (if any) i.e. list of items along with qty., currency of import, country of import & CIF value.</p> <p>Availability of CIF for packages, if any, shall be intimated in NIT.</p> <p>Bidders has to note that in order to derive the total Landed Cost to</p> <p>Evaluation shall be done excluding GST quoted by bidders.</p> <p>However, same shall be re-confirmed during techno-commercial evaluation of bids.</p>
18.0	Taxes & Duties (For Order Directly to Foreign Bidders)	<p>In case of Order on foreign Vendor, the dispatches shall be on C&F basis and Taxes & Duties in the country of dispatch (origin) shall be borne by Foreign Bidder & to be accounted in the prices quoted to BHEL/PEM/NOIDA.</p> <p>Evaluation shall be done as per provisions of GCC and its corrigendum, if any.</p>

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SPECIAL CONDITIONS OF CONTRACT (REV 04)
FOR 4 X 270 MW BHADRADRI TPS

19.0	Packing, Identification & marking [if not specified in NIT]	<ul style="list-style-type: none">• The supplier shall include and provide for securely protecting and packing the materials so as to avoid loss or damage during handling & transport by air, sea, rail and road.• All packing shall allow for easy removal and checking at site. Special precaution shall be taken to prevent rusting of steel and iron parts during transit by sea. Gas seals or other materials shall be adopted by the Contractor for protection against moisture during transit.• The number of each package in a shipment shall be shown in fraction, numerator showing number of the package and the denominator showing total number of packages in a lot / consignment. The packages number shall be generally prepared in the sequence in which they will be required for erection.• Each package delivered under the Contract shall be marked by and at the expense of the supplier and such marking must be distinct and in English language (all previous irrelevant markings being carefully obliterated). Such marking shall show the description and quantity of contents, the name and address of consignee, the gross weight and net weight of the package, the name of the Contractor with a distinctive number of mark sufficient for purposes of identification. All markings shall be carried out with such materials as to ensure quickness of drying, fastness and indelibility. Each equipment or parts of equipment shall, when shipped or railed or otherwise dispatched be tagged with reference to the assembly drawings and corresponding part numbers. Each bale or package shall contain a packing note quoting specifically the name of the Contractor, the number and date of contract and the name of the office placing the contract, nomenclature of the stores and include a schedule of parts for each complete equipment giving the part numbers with reference to the assembly drawing and the quantity of each part, drawings nos. and tag numbers.
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SPECIAL CONDITIONS OF CONTRACT (REV 04)
FOR 4 X 270 MW BHADRADRI TPS

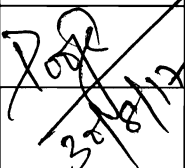
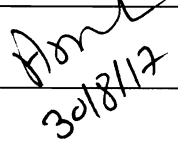
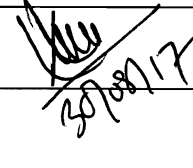
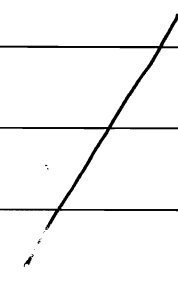
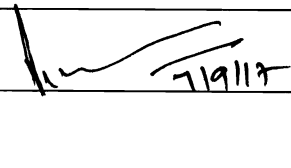
		<p>Rotor bearings should not be used as a support while packing.</p> <ul style="list-style-type: none">• Besides wherever necessary, packing shall bear a special marking "TOP", "BOTTOM", "DO NOT TURN OVER", "KEEP DRY", "HANDLE WITH CARE", etc.• All packing cases, containers (excluding marine container), packing and other similar materials shall be new.• Notwithstanding anything stated in this clause, the Contractor shall be entirely responsible for loss, damage or depreciation or deterioration to the materials & supplies due to faulty and/or insecure packing.
		<ul style="list-style-type: none">• One copy of respective standard manufacturer's erection instruction/operation instruction manual shall be kept in each package/container for immediate reference.• Each and every package box shall be marked with the following, as a minimum:<ul style="list-style-type: none">(i). Name and address of Project :(ii). Project reference :(iii). Contract No.:(iv). Packing No.: (1/10, 2/10, 3/10 when there are 10 packages For one consignment)(v). Net Weight/Gross Weight :(vi). Port of Loading :(vii). Destination Port :(viii). Packing Mark : [symbols indicating "TOP" and other special markings as per clause 10.10.(4) & 10.10.(6) above](ix). Type of Equipment :<ul style="list-style-type: none">"E" (for Equipment supply)"T" (for Tools & Tackles)"S" (for Mandatory Spares)• Two copies of packing list should be kept in case/package No. 1 of each consignment of the goods and four copies in each case (three inside the box and one copy in a special packet at the outer side of the Box).

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SPECIAL CONDITIONS OF CONTRACT (REV 04)
FOR 4 X 270 MW BHADRADRI TPS

20.0	Commissioning spares	The commissioning spares shall be properly packed separately in separate box and each spare shall be properly tagged giving details (to match the description given in the packing slip) to facilitate their proper identification. Three copies of packing list is to be kept inside the box and one copy in a special packet at the outer side of the Box.
21.0	Mandatory Spares 	Packing as per GCC. Three copies of packing list along with Manufacturing drawing no. Reference, Catalogue reference etc. is to be kept inside the box and one copy in a special packet at the outer side of the Box.
22.0	Submission of Final Drawing / Documents along with O&M Manual, Type Test Certificates (if any)	As per GCC/ Technical specification/ Kickoff meeting.

	Prepared By	Checked By	Reviewed By	Vetting by Finance	Approved By
Name:	POOJA BHARDWAJ	ANIL KUMAR PAL	ASIF IQBAL QURAIISHI		PERMINDER SINGH
Designation:	Dy. MGR/ PG-IV	Sr MGR / PG-IV	DGM / PG-IV		DH / PG-IV
Signature:					
Date:	30/8/17	30/8/17	30/8/17		31/8/17

ON COMPANY LETTER HEAD

To,
M/s Bharat Heavy Electricals Ltd.,
Project Engineering Management,
Power Project Engineering Institute,
HRD & ESI Complex,
Plot No 25, Sector-16 A, Noida-201301

Dear Sir,

This has reference to:

1. Our offer for <<Package Name>> of <<Project Name>>., Tender No. <<Tender No.>>
2. Order no. F.No. 6/18/2019-PPD dt. 23.07.2020 issued by Ministry of Finance, Department of Expenditure Public Procurement Division.

I have read the clause regarding restriction on procurement from a bidder of a country which shares a land border with India; I certify that M/s (Company Name_____) is not from such a country or, if from such a country, has been registered with the competent authority.

I hereby certify that M/s (Company Name_____) fulfil all requirements in this regard and is eligible to be considered.

[where applicable, evidence of valid registration by the competent authority shall be attached]

Thanking You,
Yours faithfully,

Director/Properiter/Partner
M/s _____

CUSTOMER/ BHEL LOGO	VENDOR CREDENTIALS SUMMARY SHEET (TO BE FILLED BY BIDDER AND SUBMITTED WITH BID)
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i.	Item/Scope				
ii.	Address of the registered office	Details of Contact Person (Name, Designation, Mobile, Email)			
iii.	Name and Address of the proposed vendor's works where item is being manufactured	Details of Contact Person: (Name, Designation, Mobile, Email)			
iv.	Annual Production Capacity for proposed item				
v.	Annual production for last 3 years for proposed item				
vi.	Details of proposed works				
1.	Year of establishment				
2.	Factory Registration Certificate	Details attached at Annexure – F2.1			
3.	Overall organization Chart with Manpower Details (Design/Manufacturing/Quality etc.)	Details attached at Annexure – F2.2			
4.	After sales service set up in India, in case of foreign sub-vendor(Location, Contact Person, Contact details etc.)	Applicable / Not applicable Details attached at Annexure – F2.3			
5.	Sources of Raw Material/Major Bought Out Item	Details attached at Annexure – F2.4			
6.	Quality Control exercised during receipt of raw material/BOI, in-process, Final Testing, packing	Details attached at Annexure – F2.5			
7.	Manufacturing facilities (List of machines, special process facilities, material handling etc.)	Details attached at Annexure – F2.6			
8.	Testing facilities (List of testing equipment)	Details attached at Annexure – F2.7			
9.	Supply reference list including recent supplies (Preferably of reputed, well known clients to whom the vendor has supplied the material and are of quantum of item/scope at point (i) above)	Reputed client name (s)..... Details attached at Annexure – F2.8 (as per format given below)			
Project/ package	Customer Name	Supplied Item (Type/Rating/Model /Capacity/Size etc)	PO ref no/date	Supplied Quantity	Date of Supply

CUSTOMER/ BHEL LOGO	VENDOR CREDENTIALS SUMMARY SHEET (TO BE FILLED BY BIDDER AND SUBMITTED WITH BID)
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10.	Product satisfactory performance feedback letter/certificates/End User Feedback	Attached at annexure - F2.9
11.	Average annual turnover for last three years with documentary proof.	
12.	Summary of Type Test Report (Type Test Details, Report No, Agency, Date of testing) for the proposed product (similar or higher rating) Note:- Reports need not to be submitted	Applicable / Not applicable Details attached at Annexure – F2.10 (if applicable)
13.	Copy of ISO 9001 certificate (if available)	Attached at Annexure – F2.11
14.	Product technical catalogues for proposed item (if available)	Details attached at Annexure – F2.12

Name		Desig		Sign:		Date	
						:	

Company's Seal/Stamp:-

Guidelines for Remote Inspection of PEM BOIs

1) OBJECTIVE:

To lay down the procedure for carrying out Remote Inspection of Bought-out Items (BOIs) for PEM suppliers wherever applicable.

2) SCOPE:

It will cover suppliers for packages of PEM BOIs for various project requirements.

Invitation is sent to the suppliers for remote inspection on applications like MS Teams, Webex, etc. by BHEL.

3) MINIMUM REQUIREMENTS AT SUPPLIER'S WORKS:

- i. Uninterrupted internet services
- ii. Good internet bandwidth (Min 100 Mbps)
- iii. Good resolution camera (2 nos) – one preferably CCTV (static at one place) and one hand hold (moving)
- iv. Smart phone with minimum 8MPi camera front and back both with optical zoom facility suitable for using web applications like Webex, MicroSoft (MS) Teams, etc.
- v. Computer and Scanner with good resolution
- vi. Digital signatures of supplier's Quality Engineer
- vii. Availability of web applications like Webex, MicroSoft (MS) Teams, as required.
- viii. All Test certificates, internal test reports, calibration reports, etc. for the items offered for inspection.
- ix. Availability of the above to be submitted to BHEL two days in advance before inspection.
- x. Dedicated team from supplier side for facilitating inspection requirements.
- xi. For ensuring proper visibility, the suggested Portable lighting sources (torch/ electric LED bulb of minimum 15 W) with no glare is to be ensured at offered job, location for remote inspection/testing. This is to be verified before start of the inspection.
- xii. The GPS location co-ordinates or any method to locate inspection location shall be captured indicating the location of the Vendor-Premises of remote inspection/testing.

4) MINIMUM REQUIREMENTS AT BHEL and CUSTOMER LOCATION :

- i. Uninterrupted internet services
- ii. Suitable internet bandwidth
- iii. Digital signatures wherever required.
- iv. Availability of web applications like Webex, MS Teams, etc. as required.
- v. Clearance from customer for conducting remote inspection

5) PROCEDURE:

- i. Supplier will raise the inspection call in BHEL - CQIR portal.
- ii. Supplier shall ensure availability of minimum requirements at supplier's works as mentioned above at point 3.

- iii. Before starting the inspection, the supplier shall submit the documents (TCs, internal test reports and calibration certificates as per approved QAP) two days before the date of inspection for review by BHEL and supplier shall coordinate with BHEL and if found satisfactory, inspection shall be considered for remote.
 - iv. Prior to commencement of remote inspection a pre inspection meeting shall be organised by BHEL inspector with supplier to ascertain the readiness for remote inspection.
- 6) During inspection, supplier shall share the location on Google maps for verifying the address of the manufacturer. Location may be captured by BHEL as screenshot.
- i. Inspection shall be on the basis of approved Quality Plans and associated reference documents mentioned.
 - ii. For witnessing inspection, supplier shall bring the mobile video camera near to the surface of the equipment or as per requirement of the inspector for clarity in viewing the test/ equipment which shall be the responsibility of supplier. Supplier shall ensure that proper lighting is available during live video streaming.
 - iii. Before start of the inspection, inspector shall ensure that all instruments shall have valid calibration report. Supplier shall ensure use of digital instruments preferably for inspection to the extent possible.
 - iv. Details of suppliers's dedicated team handling the remote inspection shall also be incorporated in the CQIR.
 - v. All details of inspection/ testing referred documents shall be mentioned in the CQIR. Recording of remote inspection shall be maintained by the BHEL inspector and this recording (unedited) shall be maintained at BHEL system for a minimum period of 3 years or till the warranty period whichever is later.
 - vi. PEM (Engineering) shall accord final technical clearance, in case of any deviation in inspected item noticed during inspection.
 - vii. Inspection shall be conducted by PEM-Q&BE assigned inspector along with PEM-Engg (if required). CQIR shall be prepared and maintained by PEM-Q&BE.
 - viii. PG will issue MDCC on the basis of acceptance of inspected items along with accepted packing photographs as per contract provisions.
- 7) **UNDERTAKING BY VENDOR:** Material inspected through remote inspections is meeting all technical requirements of BHEL. In case of any discrepancy from the above procedure/ material inspected, if found later, vendor will replace the materials without any cost implication to BHEL.
- 8) Vendor shall provide the signed and stamped of the above guidelines to BHEL as a token of acceptance.

